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SOME PRACTICAL POINTS FROM A SERIES OF ONE THOUSAND ABDOMINAL SECTIONS.*

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Anesthesia.—Except in extreme cases where the manipulations in the abdomen must be very rapid and where the patient is not in a condition for deliberate surgery, surgical anesthesia, such as may be sufficient for surgery of the extremities, is not sufficient to accomplish good abdominal work. The anesthesia must be profound since in this state of anesthesia the bowels have a tendency to remain in the abdominal cavity, the muscles can be retracted at maximum for the length of incision, while they need not be subjected to undue trauma by the tractors, manual or mechanical. Insufficient anesthesia delays and prolongs the operation and, by subjecting the field of operation to undue manipulation, promotes infection while the consequent necessity of fighting the intestines often leads to fatal shock, acute dilatation and intestinal inertia. It is necessary, then, that the anesthetist be especially skilled in anesthesia for abdominal operations. The skilled anesthetist who watches the operation is unfit for his position; while the anesthetist who has an occasional suggestion to make concerning the operation itself, should be avoided as the layman avoids the pest.

At the conclusion of the operation, just after the peritoneum is closed, is is best to wash out the stomach with warm water or normal salt solution, by stomach tube so that the patient will have less postoperative gastric disturbance, less thirst and will be generally more comfortable.

Preparation of the Abdomen.—After preparation of the abdomen in the ordinary manner—and let me say that the mechanical cleansing of the hands and abdomen is much more important and efficient than the use of antiseptics—I find a thorough rubbing of the skin with a solution of iodine in ether, by means of a gauze sponge, has practically solved the question of stitch abscesses. In fact, if there are stitch abscesses after employing this method, I believe the skin can be excluded as the source of infection. After thorough disinfection of the hands, the operator, as well as the assistants, put on sterilized cotton gloves not only as a further protection against infection (direct infection from the hands), but to protect the field of operation from any antiseptics which may remain upon the hands. Antiseptics by their irritation not only promote infection in the wound, but also cause adhesions and postoperative pain. This is also true of the excretions (perspiration) from the hands. These gloves can be changed often and are reliably aseptic. They facilitate the handling of the bowels and the drawing tight of ligatures. I have used catgut almost exclusively for the abdominal sutures and for ligatures, while in bowel work and stomach work I use silk only. The silk, No. O, is braided and immersed and preserved in 1% iodine-iodid of potash solution, where it becomes reliably aseptic and antiseptic and at the same time retains its tensile strength.

Hernia.—In opening the abdomen the question of hernia should be considered. Wherever possible, I have made my incision through the rectus muscle in such a way that the incision through the external sheath lies in a different plane from that of the internal sheath, while the muscle is split in the direction of its fibers. The internal sheath is closed with the peritoneum, then the external sheath with a combination deep and superficial continuous suture, which I have devised and which has proved both rapid of application, and efficient in holding the muscles and the sheath in their proper relations. I have found this method of suture very satisfactory, having employed it in nearly a thousand abdominal sections.

I have also frequently employed what we might call the perirectus in contradistinction to the transrectus incision. The anterior sheath of the rectus muscle is split about ¾ inch from the linea alba or from the linea semilunaris, depending upon the area to be reached. The rectus is now lifted and retracted from its sheath, the posterior sheath and peritoneum being incised in the same plane with the

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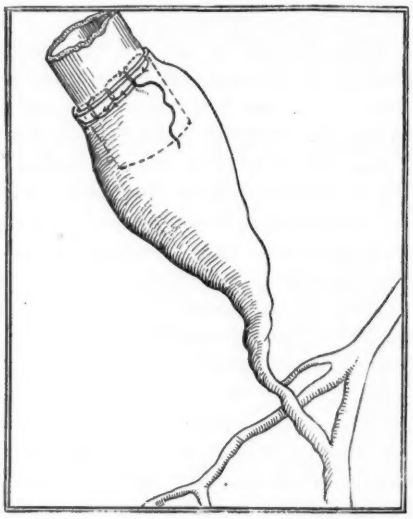
incision in the anterior sheath. In closing, the peritoneum and posterior sheath are sutured, the rectus replaced and the anterior sheath is closed. This also gives an incision which can be lengthened at will and is satisfactory in securing against hernia. Small nerve branches must be protected as far as possible from injury, since trophic change, due to nerve injury, is probably one of the more frequent causes of post-operative hernia. After the muscle and fascial sutures, the skin is closed by the sub-cuticular stitch —which I find most easily accomplished with a long, sharp, straight needle. The sub-cutaneous fat is never sutured however thick. If your hemostasis is correct, the absence of air will cause perfect coaptation of the fatty sub-cutaneous tissues and suture becomes unnecessary.

The Peritoneum.—The peritoneum should receive special consideration from the beginning of the operation; undue irritation causes adhesions; large ligated stumps are dangerous because of the necessary necrosis and absorption and because they may cause intestinal adhesions to give future trouble or present obstruction. If you close the abdomen with the field of operation well covered with peritoneum, you will find that the patient has less post-operative discomfort and makes a more rapid and more perfect recovery, and is saved the danger and discomfort of greater or less adhesions. To this end the vessels should be secured with as little tissue as possible. I have been using the Ferguson angiotryptic or other crushing hemostatic forceps at the site of the ligature, so that when the forceps are removed the ligature finds a furrow or groove left by the forceps into which it is slipped and tied. This not only secures a small stump with very little devitalized tissue, but also secures against slipping of the ligature. These stumps should be carefully covered by sliding the neighboring peritoneum over them and securing the same with fine running catgut suture. Where adhesions leave denuded places as in salpingitis, a considerable area of healthy peritoneum can frequently be peeled off from the tube and be used as a plastic flap to cover the denuded area or, where growths are removed under like conditions (adhesions), a cuff or flap of healthy peritoneum from the cyst or growth may be left for the same purpose. Where bowels are adherent, it is frequently advisable to leave peritoneum from the growth with the bowel to serve as a plastic peritoneal covering. Bowels separated from inflammatory areas where they may be denuded of peritoneum and frequently also of muscularis, should be carefully inspected after relieving the adhesions and these defects corrected by simple suture; if necessary by resection, as such areas frequently cause fecal fistulæ, or even fatal peritonitis. This condition is found most frequently in adhesions due to tubercular peritonitis and to other inflammatory conditions of long standing.

An absolutely aseptic operation is impossible except in subcutaneous divisions and ligations. If a Petri dish, with culture medium exposed, be placed near the table during an operation and closed when the operation is concluded, you will find that the gelatin upon incubation shows growths, no matter how perfect the conditions surrounding the operation have been.

Hemostasis.—Hemostasis in abdominal operations should be absolute. Blood in the belly is not



Author's Method of Suturing Drainage Tube in Gall-Bladder.

only an excellent culture medium, the clot being free from circulation, but has a tendency to cause adhesions; and of course, if in quantity, hemorrhage is of itself a menace to the life of the patient.

Abdominal operations with the bloodvessels exposed as they are and definite as to locality, should be practically bloodless. When adhesions complicate operations where conservatism of structure is desired, some oozing will occur, but the supply to these oozing areas can be easily cut off by a few well placed ligatures. In the mesentery, however, we must be careful with ligatures. We must remember that a ligature placed in the mesentery in such a way as to obstruct the circulation may result in the death of the bowel supplied by the vessels as obstructed, and may require resection of the bowel lest necrosis occur in the area supplied by these end arteries. One should be careful also in resecting the appendix where the contracted, thickened and

adherent meso-appendix might lead to ligature of the mesenteric vessels near the cecum, with consequent necrosis of the last part of the ileum.

Sutures.—In operations upon the bowel or stomach silk should be the suture material, except in the presence of pus where the silk would become infected. In resecting the small bowel, care should be taken that the excision be made with due consideration for the circulation of the bowel at the site of excision. Otherwise, necrosis on the line of suture at the distal margin may occur or if a Murphy button is used it may find its way into the abdomen at this point.

Danger of Embolism.—Embolism as a result of violent handling of the bowels may occur. I found it necessary to resect 3 feet 2 inches of bowel in an operation for strangulated hernia. The hernia itself was comparatively small, but when the constricting ring was relieved I drew through the ring this long necrotic bowel. The necrosis was due to embolism of the mesenteric vessels, the results of an attempt to reduce the strangulation by taxis. I have accomplished resection of the small bowel most rapidly and with least risk of infection by making the incision through the bowel on either side and wrapping the piece to be excised in gauze. The anastamosis is now made and the piece of bowel to be removed remains as a tumor with the mesentery as a pedicle. The mesentery is ligated in sections and the resection is complete. I have come more and more to use simple suture, although the Murphy button certainly saves time and should be used where a few minutes make a difference.

Care in Abdominal Operations.—Operations in the abdomen should be deliberate. The bowels, except when they are the seat of disease and operation, should not be in the field of operation. The operation should be carried on with the entire field in full view. There should be no slushing of blood or fluid, or thrusting or poking about of the bowels, in the manipulations. If, for instance, the ureters are in danger of ligation, they should be laid bare by splitting the peritoneum over them so that they will be in full view. If there are adhesions low down (let us say near the rectum), that part of the bowel should be in full view. The so-called educated touch may interpret a partially torn rectum to be a well delivered adhesion, or a ligated ureter to be a well secured uterine artery. Fluids in the bowel travel in the direction of least resistance, which is in the direction of the lumen of the bowel. This is of great assistance in the efficiency of bowel suture, but in the rectum the resistance of the sphincter ani, as well as the more solid condition of the stool in this place, makes a tear or defect the direction of least resistance. Hence injuries low down in the large bowel and sigmoid and rectum, should receive especial care. The sutures should be firmly placed and in several layers, and the sphincter should be dilated at the conclusion of the operation.

Surgical Interference in Infected Cases.—Surgical interference in the presence of infection probably requires the greatest experience of any class of abdominal cases. I have followed certain rules in these cases which have given me such results as lead me to believe them to be good.

The management of abdominal abscesses from pus tubes, ruptured gall bladder, suppurative pancreatitis, localized peritonitis, and perforating ulcers, being practically the same, we will confine ourselves to the management of appendiceal abscesses as being a typical procedure in these cases.

The source of infection should be removed. This object correctly pursued not only does not add to the danger to the patient, but frequently discloses secondary deposits of pus which simple drainage overlooks, and in this way makes the operation less dangerous. However, in a very few cases my judgment has led me to do a simple drainage operation for these reasons: First, the inflamed granular bowel and that covered with fibrinous exudate, have ceased to absorb infection. The glistening gray normal bowel on the other hand rapidly absorbs infection; hence no normal bowel should be allowed to show itself in the field of operation while the pus is being delivered. Secondly. Escaping pus follows the law of gravity; hence it will flow to the most dependent points. In the case of the appendix, the pelvis and the right renal fossa are the most dependent parts; hence these are the directions of probable infection. With these two facts in mind, with the patient in profound anesthesia, an incision is made internal to the mass of adhesions. Immediately the healthy bowels are packed back to the left side of the abdomen with a large sponge (a yard or more long). Next the bowels are packed out of the pelvis on the right side with smaller gauze sponges in such a way as to thrust aside the healthy non-adherent bowels and at the same time fill this dependent point in case of leakage. The right renal fossa is now packed in a similar manner, so that you have a well-defined gauze-walled area, within which we confine our manipulations. The adhesions are carefully separated until a small breach is made in the barrier of adhesions, from which pus begins to ooze. This pus is picked up as rapidly as it flows by means of small dry gauze swabs until sufficient has escaped to relieve the tension in the abscess cavity. The

opening is then enlarged and swabbed out with gauze, moistened with 1% lysol solution. You now have a clean pus cavity somewhat sterilized, and sometimes even thoroughly so. The appendix, or what is left of the appendix, is found and ligated with catgut and removed. At this point I have frequently found a secondary abscess internal to, or at either end of the appendix. A cigarette or a plain tubular drain is now introduced into the cavity after once more wiping it out with a sponge moistened with 1% lysol solution. The protective wall of gauze is removed, the drains are drawn through secondary openings, either in the lumbar region or somewhere near the original incision or through both places and the original incision is closed. If the collection of pus is due to a pus tube, the same technic is followed; the bowels packed back, a wall of gauze thrown around the abscess, the abscess slowly delivered under control and the pus cavity wiped out with 1% lysol solution and drained. If it is a ruptured gall-bladder, we employ the same technic. The stones are removed from the gall-bladder and ducts, and the pus cavity drained. The gall-bladder itself is drained as follows:

Peritonitis.—In general suppurative peritonitis, due to the appendix, the offending member is quickly removed, a drain is placed in the renal fossa and pelvis, and the incision quickly closed without lavage. If due to ruptured gall-bladder, the gall-bladder is quickly attended to. Abdominal drainage should be at the most dependent point. If due to perforation, the perforation is quickly found, repaired, and the abdominal drained in the same way. I have found various grades of fluid in different parts of the same abdomen varying from pus on the one side, opaque serum in the pelvis, and serum on the other side, while there were no adhesions walling off the fluids.

Washing Out the Peritoneal Cavity.—I have always felt that washing about the infected material and diluting the serum or pus not only interferes with the local lecocytosis which is the main factor in the natural disposal of infection, but also materially adds pabulum to the bacteria which are present. Hence I do not flush the abdomen except in the absence of infection where I desire the effect of a transfusion. Then I have frequently poured a quart of normal saline solution into the abdomen before closing it. I do not even wash away the blood which dries upon the skin after closure, as it adds the moisture so necessary to bacterial growth. In gunshot or stab wounds where there is much leakage, peritoneal lavage may be of advantage.

Malignant Growths.—Malignant growths in the abdomen, as elsewhere, should have the same precautionary measures against infection which we observe in suppurative disturbances. Cancer is infectious, and stitch vaccination cancer is not an uncommon occurrence which teaches us a most valuable lesson. If you tear or cut into cancerous tissue, you infect the field of operation as you do when you spill pus, except that the infection manifests itself less rapidly but possibly more certainly. Your decisions should be broad and through healthy structure.

Cancer, especially when it springs from the hollow viscera and from those viscera which have communication with the outer world, is liable to secondary infection. Hence, frequently infiltration and attachments to neighboring organs are inflammatory in character so that many growths, which appear inoperable on first examination, prove to be operable on examination through the open abdomen. This is particularly true of cancer of the uterus. Frequently when the uterus is immovable, fixed to the bladder or rectum, I have found the fixations due to inflammatory reaction and not to an extension of the malignant growth. I have operated a number of these cases with most satisfactory result. If the infiltrations are malignant and require resection of the ureter or part of the bladder, it is better to excise through healthy structures, so that they are removed in one piece with the uterus rather than to infect the field by cutting through the cancerous tissue with subsequent resection of the infiltrated organs. Cancer of the bowels, except high up and low down (in the rectum), seem to belong to the less malignant variety of carcinomata. It is surprising at times how rather advanced cancer of the bowel will yield to excision. I have in mind a case which I operated upon over two years ago. Miss L———, from Germany, very fleshy, weighing considerably over 200 lbs., came to me to be operated for appendicitis. She had a large immovable mass in the right iliac fossa, large enough to be felt through the very thick abdominal wall. This proved to be a carcinoma of the cecum which I resected together with a large piece of the anterior abdominal wall into which it had infiltrated, three feet of small bowel and the large bowel up to the middle of the transverse colon. The extensive excision of the small bowel was necessary so that an anastomosis with the descending colon could be made without tension on the mesentery. This woman informs me that she is well and in perfect health.

Retroperitoneal Conditions.—Frequently retroperitoneal conditions are encountered after the ab-

domen is opened. As a rule, a secondary posterior incision is the better method for attacking them. In one case, while operating for appendicitis, I felt a mass behind the posterior parietal peritoneum. After resecting the appendix, I pulled back the parietal peritoneum until the ureter was exposed. Here a large stone was found and immediately removed. I established drainage by a stab wound through the back and closed up the opening in the anterior abdominal wall in the usual manner.

336 WEST BERRY STREET.

THE SURGICAL TREATMENT OF UTERINE FIBROIDS.*

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I shall limit myself particularly to the surgical aspect presented by uterine fibroids, with especial reference to the complications and degenerations with which they are so frequently associated.

I wish to say at the outset that there is no abdominal operation that I approach with more profound respect than a panhystero-myomectomy, which has to deal with a large, complicated fibromyoma, and to announce that my position is one of an exterminating warfare against them, no matter at what stage they are observed. I know that I subject myself to the charge of being ultra-radical and that some of the leading gynecologists strongly urge that the mere presence of a fibroid tumor is no indication for operation. But when we view them in the light of the too often degenerative changes which they are so prone to undergo, and the grave pelvic inflammations and other disturbances which they occasion, I feel sure that my position will be deemed not altogether untenable.

It is true that the history of the majority of myomata is clinically and pathologically one of benignity, and that with the establishment of the menopause, the growths are retrogressive in size, or at least remain stationary; yet it is also true that this period of life is the time at which a malignant change in the tumor most frequently manifests itself; nor can we tell when the seemingly most innocent fibroids will produce serious pelvic or abdominal disturbance that will hazard the patient's life and greatly add to the difficulties attending operation.

Operations on fibroids carry a mortality of approximately five per cent., which is not very much in excess of the average percentage of cases in which the abdominal cavity is invaded for all causes. Yet Dr. T. B. Eastman, of Indianapolis, in 117 cases operated on, found forty-three that presented complications that might have terminated fatally. He tabulates them as follows: Hydrosalpinx, five; suppurating dermoids, three; cyst of the parovarium, one; sarcoma, one; necrosis of the tumor, eight; cystic degeneration of the ovaries, three; ovarian cyst, four; intraligamentous fibroids, three; pyosalpinx or salpingitis, seven; hematosalpinx, one; cystic degeneration of the tumor, one; myxomatous degeneration, three; adeno-carcinoma of the body of the uterus, two. This is truly a formidable list of diversified complications.

Ellice McDonald, in seven hundred and eighty-eight collected cases, found degenerative changes in three hundred and twelve, and of these fifty were malignant, seventeen being sarcomatous, fifteen carcinomata cervicis, seventeen carcinomata corporis, and one syncytioma malignum.

Degenerative changes are by no means the most pronounced indication for operation. Among the most urgent is anemia, which may be of a severe grade. Hemorrhage is one of the commonest symptoms, being present, according to Winter, in two-thirds of one thousand cases of his own cases, menorrhagia being oftener observed than metrorrhagia, the latter condition being suggestive of malignant change or submucous development of the growth. In all cases of metrorrhagia or protracted menorrhagia this in itself constitutes an essential indication for operation, and Winter states that a hemoglobin index as low as thirty per cent. is no contraindication, some authorities even placing it at twenty per cent. Operations, however, with an extreme grade of anemia, require the utmost care to prevent the patient succumbing from the loss of blood, surgical shock, or the direct effects of the anesthetic.

Pain, when of a severe type, is another guide post pointing to operation, irrespective of the size of the tumor. It is well known that small growths, when confined to the pelvis, are productive of a great deal more discomfort than after they have made their escape into the abdomen proper, when they cause symptoms mainly from their large size and weight, though tumors of a subserous type may be very annoying, even when small, by reason of their omental and intestinal attachments and the dragging pains produced thereby. When abdominal tumors have reached a size sufficiently large to cause interference of a serious nature with the functions of the viscera, whether abdominal or thoracic, operation is

* Read before the Tennessee State Medical Society.

urgent, though, as stated above, pelvic tumors when tightly incarcerated, either by adhesions or by being retained by the bony walls, may interfere more seriously with the patient's health by pressure on the bladder, rectum, uterus, nerves, and bloodvessels.

Any of the foregoing complications or conditions are recognized by us all as demanding the removal of the offending organ, but I wish to go a step further and endorse the position taken by some of the foremost workers in the field of gynecology who lay down the broad rule that all fibromyomata should be removed as soon as diagnosed. Even those who plead strongest for conservatism in the preservation of the female genitalia must admit that early operation carries a very much lower mortality than when forced upon us by complications which render very much more difficult any surgical procedure, and which directly threaten life by prolonged anesthesia, shock, and the train of ills necessarily inherent upon the particular morbid process. For example, Hall, of Cincinnati, in speaking of the relative danger of pyosalpinx and ovarian hematomata complicating fibroids, gives seven of the former operated upon with peritonitis developing in one as against six of the latter, with peritonitis in five.

Conservatism in preserving the female sexual organs has its origin in sentiment alone, healthy sentiment, I admit. And I hope it will always carry its full weight with the medical profession. But when we are brought face to face with the problem of sentiment versus health, on which side must the conscientious physician align himself? It is only desired to preserve the genital organs during the childbearing period, and yet the mere presence of fibroids in the vast majority of cases either renders the patient sterile, or the victim of repeated abortions, and should she be so unfortunate as to proceed to term, she has the cheering prospect usually of a tedious and dangerous labor, with the probability of a Porro operation confronting her in the end. I do not urge that all who suffer from myomatous growths, should be made to undergo an entire ablation of the uterus and its appendages, for there are well-defined methods of operation that deal with each class of growths, but insist that some one of the various surgical procedures should be resorted to.

For those who believe in preserving these organs, even at some risk, it is only fair to state that Knauer, along with many others, believes that when near the menopause, unless pain, hemorrhage, or some complication is manifested, an expectant line of treatment should be adopted.

When operative measures are resorted to, the tumors and uterus should be immediately examined to see if they present evidence of malignant change. Cullen, of Baltimore, in a recent article, lays strong emphasis on this point, and cites a case in which sarcoma developed in the cervical stump nearly two years after operation, the specimen, which had been preserved but not thoroughly examined at operation, showing at that time undoubted microscopical and macroscopical evidence of malignancy. I have witnessed in the past year two operations for apparently benign growths, which on section proved to be fibrosarcomata. This is, of course, of great clinical importance, enabling us to determine whether we shall be content with a supravaginal hysterectomy or a complete removal.

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AN ADVANTAGE OF OPERATION IN THE ACUTE STAGE OF APPENDICITIS.

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The profession has heard much about the great safety of the operation for appendicitis in the interval, and perhaps largely because of the statistics of this operation, practitioners have been tempted to procrastinate whenever possible in the more acute cases. Having brought the patient to the interval they believe that a positive good has been accomplished because operative recovery is now practically assured. When perforation instead of resolution occurs, however, the wisdom of the Fabian policy is not evident. It has long been my belief that, in theory as well as in practice, this idea is entirely wrong and that the only cases in which delay is admissible, barring the aged and those suffering from some complicating serious disease, are those of initial shock, and those of very far advanced general peritonitis when death seems almost certain as a consequence of the operation and yet where a very small percentage may recover without surgical treatment.

In the usual "acute appendicitis" of the clinician, operation is practically as safe as if performed in the interval, and when this "acute appendicitis" is

of the so-called "catarrhal" variety without perforation, though possibly with alarming general symptoms, the operation will be followed by immediate relief of these symptoms and recovery will be quite as prompt as in the cold operation.

If we operate upon an individual whose appendix is diseased but who is not in an attack, we take a practically well person and make him sick. His system will be obliged to array its forces, its opsonins and its leucocytes, to redress the surgical insult. The individual suffering from the acute disease, on the other hand, is in a state of preparation for a more serious battle than that with the surgeon. To such a patient the operation comes as a comparatively little thing and if no error of technic mars the surgeon's work, relief is immediate and convalescence speedy. Clinically I have observed that the "interval" patient suffers more, for the first thirty-six hours after the operation, possibly by comparison with his previous state, than does the one who has been operated upon in the attack. The operative statistics, always excepting cases of perforation, thrombosis, gangrene, etc., are quite as good in acute appendicitis as in the "interval" operation, and if thrombosis, or perforation or gangrene is present, it simply means that the operation was all the more urgently indicated.

OBLITERATION OF THE DEAD SPACE FOLLOWING PERINEAL EXTIRPATION OF THE RECTUM.

BY JEROME M. LYNCH, M.D.,

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That operation which is attended with the least shock, and has the lowest mortality, must, of necessity, be the operation of choice. In cancer of the rectum, it is now recognized that the perineal route possesses these advantages. Seventy-five per cent. of the deaths following the operation are due to sepsis, and a fair per cent. to hemorrhage. The sepsis, in a great measure, is due to the accident of the surgeon putting his finger in the rectum as a guide, and then, without thinking, putting it back in the wound.

This, to a certain extent, has been obviated by doing a preliminary colostomy, (when this is done, the transverse colon should be selected, in order to leave the colon and sigmoid free so that one may be able to bring down a sufficient amount of the gut at the subsequent operation to enable one to resect it above the growth, and still have sufficient intestine left to attach it to the muco-cutaneous surface without tension); or by following the Quenu method (tying off the rectum after the mucous membrane has been separated from the skin, and the rectum freed from its attachment to the levator ani muscle, afterwards cauterizing the exposed mucous end, and proceeding with the operation, trusting to the sense of touch to avoid wounding the rectum.)

But admitting that the mortality may be reduced by these methods, we still have to deal with suppuration from the large cavity that remains between the rectum and the hollow of the sacrum. Heretofore, the method has been, after completing the operation, to make an incision, extending from a half-inch back of the posterior commissure to a point corresponding to the sacro-coccygeal joint, and in this manner draining the posterior pelvic rectal space. As a result, there remains a sinus that takes from six weeks to six months to close; and, in the meantime, the patient is subjected to the napkin life, as it is almost impossible to avoid infection of this region.

Dr. James P. Tuttle has recently devised and put into practice, with excellent results, a method which obliterates this space and makes the operation as near ideal as possible. After the rectum has been freed from its attachments, and sufficient healthy gut is left, after removing the growth, to attach it to the muco-cutaneous surface, three sutures are passed through the muscular wall of the gut, embracing about one-quarter of its circumference. These are threaded on a long Peaslee needle, or on an ordinary half-curved Hagedorn needle, and brought out on either side of the sacrum and coccyx, about one-half inch apart, and there tied over a piece of gauze, thus obliterating the dead space. After this the operation is completed in the usual manner.

This modification of the ordinary procedure presents other advantages: first, by holding the rectum snugly in apposition with the hollow of the sacrum, it arrests hemorrhage and oozing; secondly, by affording good anchorage, it relieves the tension over the muco-cutaneous sutures, and thereby prevents cutting of those sutures when the patient strains or moves his bowels. The results in the cases operated upon are: 1, a very material reduction in the period of convalescence; 2, a minimum of after wound dressing, with the consequent lessening of the chance of secondary infection; 3, the greater comfort of the patient.

36 WEST THIRTY-FIFTH STREET.

BLOOD EXAMINATION IN SURGICAL DIAGNOSIS. A PRACTICAL STUDY OF ITS SCOPE AND TECHNIC.

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(Continued from the May number.)

Examination of Fresh Blood.

Much can be learned from the examination of unstained blood —fresh blood. The drop appearing as a result of puncture may suggest anemia, when pale and watery; cyanosis when of dark bluish hue; leukemia when milky or opalescent. To secure the fresh blood for examination, a cleaned dry finger is punctured. The first drop of blood appearing is wiped away. A clean, polished cover glass is allowed to touch the summit of the drop as it appears. The glass must not touch the finger. The cover glass is placed upon a thoroughly cleaned and polished slide, blood side down. If both glasses are clean and dry the blood promptly spreads to form a thin film having at the periphery irregular masses of corpuscles and

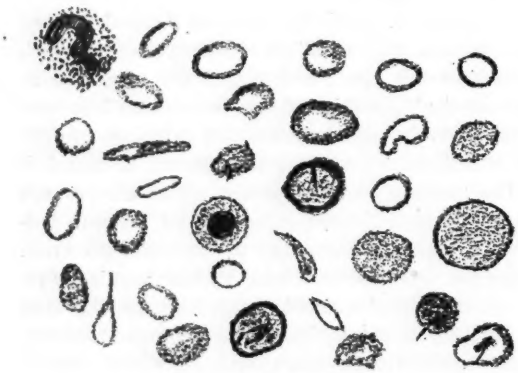

Fig. 25. Chlorotic Type.

many rouleaux. Unless this thin layer of corpuscles is gotten, the slide is of little value. Slightly warming the slides facilitates spreading. If it becomes desirable to study the fresh blood for a long period of time the edges of the cover glass are vaselined after the blood film has been secured. The cover glass need not be pressed down to get a thin spread; nor should any pressure be exerted for fear of distorting the corpuscles.

The slide is given moderate illumination and examined under a 1/6 lens.

Normally the red corpuscles appear yellowish green with concavity very noticeable. Very little practice is required to detect abnormalities in size and shape of the red corpuscles and to note the decrease or absence of hemoglobin. Crenation can be profitably noted as it is no infrequent error to mistake a slightly crenated corpuscle for a cell containing a hyalin form of plasmodia malaria.

A general idea of the leucocytes can be gotten, even including an impression as to whether the leucocytes are increased or decreased.

The lymphocytes show a single clear refractile nucleus with non-granular cell body. The polynuclear neutrophiles show many nuclei and the cell body possesses fine slightly refractile granules. The eosinophiles present their coarse, highly refractile granules. The myelocytes show as large cells with large single nucleus and numerous fine refractile granules.

Pigmentation of leucocytes is of importance in those cases of malaria where the plasmodia have not been detected in the peripheral blood. The pigmented leucocytes are always present in malaria

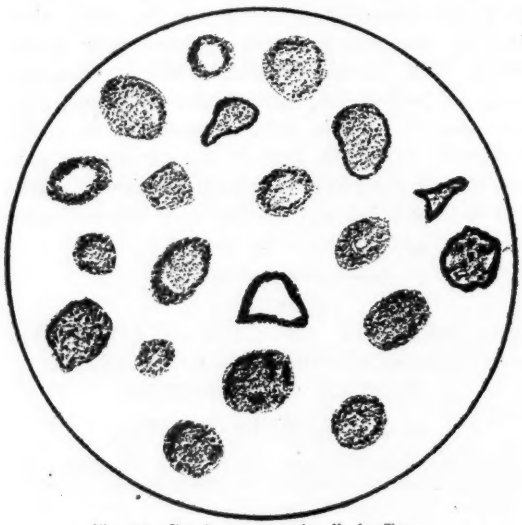

Fig. 26. Pernicious Anemia—Early Type.

whether the plasmodia are peripherally circulating or not. A yellowish or red pigment indicates tertian or quartan infection. Deep black pigment speaks for the aestivo-autumnal parasite. The more numerous the pigmented leucocytes and the more crowded the leucocytes are with pigment granules the older the infection.

The blood parasites may all be found in examination of fresh films. Plasmodia malaria, filaria nocturna, spirillum Obermeierii, trypanosome gambiense can be thus detected.

The description of the parasites appearing in blood may better be left to larger works dealing with parasitology, or to text-books on hematology. Figures to appear in the next issue will serve to illustrate the parasites already mentioned.

The best hours to find filaria nocturna are from 5 or 7 P. M. to midnight. The lashing of the filaria without movement is most valuable in revealing their whereabouts on a slide, as currents are set up which quickly attract the attention of the examiner.

The spirillum of relapsing fever is almost always to be found on the second day of the fever and does not disappear during the afebrile period.

ANEMIA. Anemia is a term descriptive of a state of deterioration of the blood. The deterioration may be due to a falling off of red corpuscles or a decrease of hemoglobin or to both together. The question of anemia and pallor are different. Many pale individuals reveal no anemia, while red cheeked young women from foreign lands after a short sojourn in America begin to show marked evidences of blood deterioration. The classification of anemia is largely arbitrary. Types are described to include groups having similar blood findings. Anemias vary from the mildest type, showing only slight variation in the hemoglobin, to changes most profound in the corpuscles leading to a fatal termination. It must be understood that all gradations of anemias can be found, from the mildest to the most severe, and often the classification has to take on elastic qualities to place a particular anemia under any general head. Why one particular type of anemia appears is not within our province to discuss. It is necessary to state that each particular type of anemia has been observed to change into other types.

In order to appreciate blood examinations in surgical conditions, more especially from a diagnostic point of view, it is necessary to have a mental picture of the various types of anemias. As suggested, I regard anemia as a general term covering all grades of blood deterioration. I do not speak of chlorosis because I do not believe it is an anemia *per se*, but I regard the anemia of chloratic type as of great importance. With this idea in mind I have arranged the following scheme for the study of anemias:

- Anemia
  - Without leucocytosis. — Chlorotic type
  - Red cells principally altered — Pernicious anemia type.
  - With leucocytosis. — Pseudoleukemia type.
  - Leucocytes principally altered. — Leukemia type.
    - Lymphatic
      - (a) large
      - (b) small
    - Myelogenous

This classification is on a hematological and not on a clinical basis.

Fig. 27. Pernicious Anemia—Advanced Type.

Fig. 28. Acute Lymphatic Leukemia.

The question of etiology, the time-honored divisions into congenital and acquired, primary and secondary anemia, deserve no place in the classification. The blood alterations are in themselves symptoms and should be considered merely as symptoms. The so-called secondary anemia demands passing attention. "Almost every disease of any organ may produce secondary anemia and it is of high or low grade, according to the severity of the disease." Such secondary anemias may or may not be accompanied by enlarged spleen. The mild cases show decreased hemoglobin only, while the

severe types exhibit poikilocytes, normoblasts and even myelocytes. In children secondary anemias may assume the type of pernicious anemia or gradually develop into a leukemia.

The Chlorotic Type. (Fig. 25.) The hemoglobin fall is greater than the decrease in red corpuscles. Hemoglobin may fall as low as 20%. The red corpuscles may remain almost normal or decrease to 3,500,000 to 4,000,000—in severe cases to 3,000,000. The valeur globulaire is low, averaging 0.5 poikilocytes and punctate basophilia occurs in marked cases. Polychromatophilia is common. Normoblasts appear in severe cases only, while megaloblasts seldom appear. There is no variation in the number or proportion of the leucocytes.

Pernicious Anemia Type. (Figs. 26 and 27.) The hemoglobin is greatly reduced, averaging 20% to 40%. The red corpuscles experience a more marked reduction and average about 1,000,000. Quincke has reported as low as 143,000. The index is high—1.0 to 1.75. All varieties of red corpuscles are found: microcytes, poikilocytes numerous, megalocytes. Megalocytes are very numerous—in fact, unless they form at least one-third of the red corpuscles this pernicious anemia type is not with certainty determined. The megaloblasts vary in number depending upon the degree or intensity of the anemia. They are always present in greater number than the normoblasts. Normoblasts are not to be found in large number save as the anemia is decreasing. The red corpuscles are all swollen and the clear central area is frequently not noted, particularly in megalocytes. Punctate basophilia is very common. Polychromatophilia is very pronounced, especially in megalocytes and megaloblasts. The leucocytes are not increased in number. A leucopenia may be found—as low as 1,500. A relative lymphocytosis is at times noted. Eosinophiles are present in small numbers. Occasionally myelocytes are found.

Pseudoleukemia Type. Under this head are to be classed those marked anemias accompanied by marked changes in the leucocytes. To take up all the varieties of this type would not be profitable. Van Jaksch's anemia, for example, shows the hemoglobin greatly reduced. The red cells are as low as 1,500,000 and seldom higher than 3,000,000. Normoblasts are very abundant as are the megaloblasts. Megaloblasts may be more numerous than the normoblasts. The leucocytes are greatly increased, from 20,000 to 60,000. In some cases the lymphocytes are relatively increased, in others the polynuclear neutrophiles. Eosinophiles are usually increased. Myelocytes are present up to 10%. This type may change into a pernicious anemia type or a leukemia type. At this point it is proper to state that Hodgkin's disease shows a chlorotic type of anemia, while chronic splenic anemia or the anemia of Banti's disease is of the pernicious anemia type. A plastic anemia is also of this type.

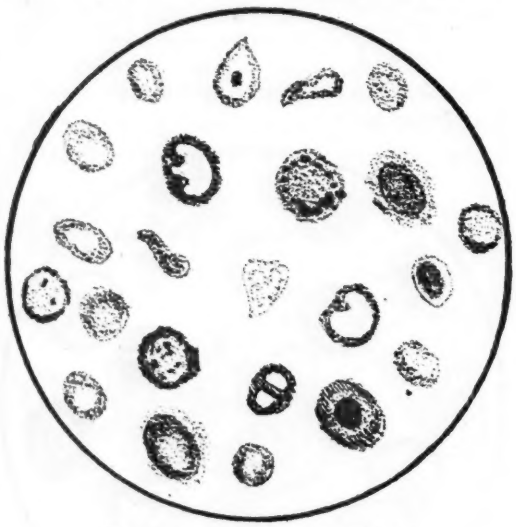

Fig. 29. Chronic Lymphatic Leukemia.

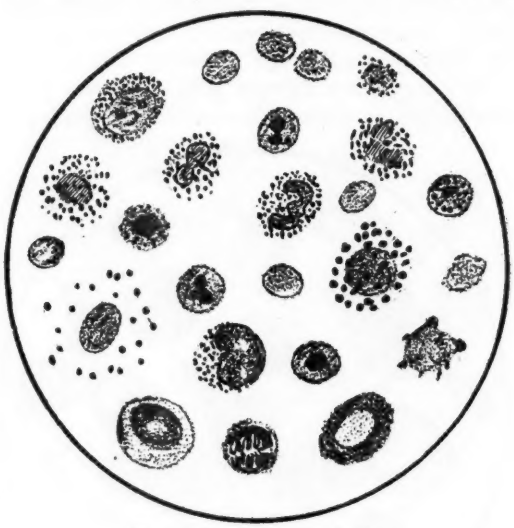

Fig. 30. Myelogenous Leukemia.

Leukemia Type. The pronounced changes of this type involve the leucocytes. The hemoglobin is decreased. The red corpuscles vary between 1,000,000 and 3,000,000, not falling as low as in the pernicious anemia type. The blood shows normoblasts early as well as poikilocytes and degenerations. The leucocytes are in exceedingly great numbers, usually over 150,000 in myelogenous leukemia.

The lymphatic variety presents the lymphocytes as forming 80% to 90% or even 99% of all the leucocytes—myelocytes are very scarce, as are eosinophilic or basophilic cells. The lymphatic variety may be subdivided, depending upon the predominating type of lymphocyte. The large lymphatic picture is made up principally of large lymphocytes (10 to 15 microns). The total leucocytosis may be moderate, not seldom under 100,000. This is the variety generally called acute lymphatic leukemia. (Fig. 28.) The small lymphatic picture is characterized by small lymphocytes. The total leucocytosis may be very high, 100,000 to 500,000. (Fig. 27.) The myelogenous variety of the leukemia type reveals the myelocytes present in large numbers, from 20% to 60% of all the leucocytes. The total leucocyte count is seldom less than 150,000, but may be as low as 25,000 or as high as 1,200,000. The lymphocytes are relatively decreased. The polynuclear neutrophiles are decreased. The eosinophiles are usually increased, though not always relatively. Eosinophilic myelocytes are very prominent in this blood picture. The basophiles are relatively increased—a very diagnostic point in this variety of anemia. (Fig. 30.) The basophilic myelocytes rarely seen are present in this blood picture. Polynuclear cells and myelocytes are frequently noted to be of unusually large size. The leucocytes show all kinds of degenerations.

(To be continued.)

INTERPRETATION OF SKIAGRAPHS.

"The sole requisite for x-ray work is no longer simply the possession of an apparatus. A perfect technic demands much study, and the interpretation of the picture when finished is even more difficult than its production. A skiagraph has no intrinsic value. It is worthless, even dangerous, unless in the hands of one able to correctly interpret it. This interpretation implies a familiarity with "x-ray anatomy," which differs greatly from the anatomy revealed in the dissecting-room. The personal equation is an important factor in this work. Plates of our own production we can interpret best, because we know the conditions surrounding their production, such as position of patient, angle of incidence of the light and methods of development. For these reasons the report of the x-ray examination is being received with as much interest as the report of the bacteriological or pathological examination."—SIDNEY LANGE in the *Lancet Clinic.*

REPORT OF A CASE OF DISLOCATION OF THE UPPER END OF THE FIBULA.

BY FRANK B. GOLLEY, M.D.,
MILWAUKEE..

There have been but about twenty-five recorded cases of dislocation of the upper end of the fibula, of all varieties, uncomplicated by fracture. The following case is, therefore, sufficiently rare to deserve report:

Mr. P., a muscular man, weighing 180 pounds, while walking on the evening of February 15, 1907, slipped and, after sliding, sprawling and twisting, finally landed in a sitting posture, with the left leg and foot directly under him.* At the same time he heard "something snap." I saw him two hours later. My attention was attracted chiefly to the ankle and lower third of the left leg, which were very much swollen. I could find no fracture, but there was evidence of laceration of the external lateral ligament of the ankle, especially of its anterior fasciculus.

The next day, on flexing or extending the foot, the patient complained of a grating or grinding sensation in the calf of the leg. I then discovered, by palpation, an outward and forward dislocation of the upper end of the fibula, which became displaced as much as, or more than, the width of the bone whenever the foot was flexed or extended. An ecchymosis the size of a silver dollar developed subsequently over the site of dislocation.

The luxation was readily reduced. A snug plaster of Paris dressing was applied from the instep to the knee, and left in place three weeks. The dislocation was found cured when the cast was removed, but the ankle remained stiff and lame for a month longer.

In a fairly large experience of twenty-five years with fractures and dislocations, I have seen but one case at all similar, and that a partial luxation of the head of the bone.

COLLES' FRACTURE.

Reduction of all displacement, except in impaction, is the *sine qua non* in the treatment; it is best accomplished under anesthesia, by hyperextension and traction over one's knee. Recurrence of deformity is prone to follow if reduction be incomplete, but the line of the radius is the guide. If this be straight, reduction is complete.—W. D. HAINES in *The Lancet-Clinic.*

* This bending of the leg (and foot?) under the body seems to be fairly characteristic of the mode of production of the dislocation in the recorded cases that were not due to muscular effort without a fall.

GONORRHEAL INVASION OF THE UTERUS AND FALLOPIAN TUBES.*

By Brooks H. Wells, M.D.,
Professor of Gynecology at the New York Polyclinic Medical School and Hospital,
NEW YORK.

The subject chosen for to-night's discussion is one of most wide-reaching importance and interest. A full understanding and control of all its phases would mean the solving of a riddle as old as the history of the human race. It has to do with an evil thing that is born of the unbridled passions of man, a creature of darkness that steals the bloom and joy of life not only from the frail sister of the street but too often also from your fairest and most carefully guarded daughter, striking her through him she has chosen and trusted as her husband and protector.

For how many childless homes is this evil responsible, for how many lives made sunless by the cloud of a chronic pelvic invalidism, for how many marriages made failures by marital incapacity? For as many as, or more than, from all other causes of pelvic ills combined!

I do not feel that this estimate of its importance is exaggerated. It is no imaginative statement made in the heat of argument, but a cold fact easily proved in the experience of all who have given the question proper thought. Twenty-five years ago gonorrhea was hardly considered as a cause of pelvic disability, or chronic invalidism, or sterility; now, thanks to the labors of Noeggerath and of many other careful observers, we know how widespread and serious are its ravages.

My part in the discussion of the subject here will have to do only with the manner and course of invasion of the uterus and the Fallopian tubes.

It is difficult to find reliable statistical evidence of the relative frequency of gonorrheal endometritis and salpingitis, as compared with the frequency of infections of other portions of the genital tract in the female, but from my own experience I believe that at least one case in four develops a gonorrheal endometritis or endocervicitis; and one in eight or ten of these has a gonorrheal infection of the tubes.

Though I have seen many cases of gonorrhea in little girls (infancy to ten or twelve years of age), I know of none in which it could be shown that the disease had invaded the infantile endometrium or tubes. At or after puberty, however, with the development of these parts, the conditions are changed.

Gonorrheal Endometritis may be primary, by direct infection, but is more often secondary to an infection of the lower portions of the genital tract. The only positive means of diagnosis is the microscope. It usually begins within two or three months after the primary infection and sometimes within a few days. Its onset is often so mild and insidious that no symptoms occur to call the patient's attention to her condition until, perhaps, she begins to suffer from a tubal infection. This mild infection is often intensified and its extension favored by any mechanical interference within the interior of the uterus. Its symptoms may be only a moderate pelvic discomfort and a more or less muco-purulent discharge. The symptoms are intensified just before, during and after menstruation, at which times the gonococci become more numerous and virulent.

The acute form follows a more virulent primary infection. There is a chill, generally slight, some rise of temperature, possibly to not over 100° to 101°, malaise from absorption of toxins, pelvic pain, muco-purulent or bloody discharge, and tenderness is elicited by bimanual palpation of the uterus. After a few days these symptoms pass into those of the subacute or chronic condition described above.

Gonorrheal Salpingitis is caused by an extension of infection from the uterus. The interval between the primary infection and the invasion of the tubes may be only a few days or may occur after a long time and after periods of symptomatic health.

The invasion of the tubes may be from an extension from the endometrium without apparent exciting cause; or may follow a labor, or abortion, or some instrumental trauma, as from dilatation or curettage of the uterus.

Gonorrheal salpingitis is usually bilateral, and may exist for some time without showing any distinct symptoms. More often the symptoms are fairly well marked and rarely they may be virulently intense so as to produce a picture of acute peritoneal shock.

The invasion is apt to be marked by a slight chill, followed by a moderate rise in temperature. There is more or less malaise and prostration. There is pain in the ovarian regions, most often referred to the left side. The pain is at first sharp, cutting or pulsating, later a dull, steady ache; or severe and paroxysmal, sometimes both. The pain when severe, is apt to radiate along the sacral plexus or sciatic nerve. The symptoms are aggravated by defecation, exertion, or coitus. Menstruation is generally profuse, irregular and painful, as a result of the accompanying endometritis and the disturbance of the pelvic circulation by the disease process. Mic-

* Part of a discussion on gonorrhea before the New York County Medical Society on March 25, 1907.

turition is commonly frequent and painful. The general health suffers from the absorption of toxins and the distressing effect of pain and anxiety, so that the patient becomes more or less of a neurasthenic invalid.

A bimanual pelvic examination reveals the enlarged and tender tubes behind or at the side of the uterus and gives us the familiar picture of a peri-uterine inflammation.

Prognosis.—Sometimes the condition of the tubes improves so that there is a symptomatic cure. More often the improvement is only temporary and the patient suffers from a recurrence of the trouble with increasing invalidism, until relieved by operation. It is said that the tubal abscess may rupture or perforate and be discharged through some hollow viscus, but this is rare in cases of undoubted gonorrheal origin, and personally I have never seen it. In the milder cases sterility is the most important result; in the more severe, an increasing invalidism; in the rare fulminant type, death may occur within a few days. There is no doubt that gonorrheal infection of the uterus and its appendages renders those structures more vulnerable to the attacks of other microorganisms.

In closing let me sketch two clinical pictures, one showing a result of gonorrheal salpingitis so frequent that we all have known of its ravages, the other portraying a condition fortunately seldom seen.

E. M. was married when twenty years of age. She was a beautiful specimen of womanly perfection physically, mentally and morally. Her husband, eight years older than herself, had had a persistent gonorrhea. He had been treated and his physician had assured him that he could safely marry.

Shortly after marriage the wife suffered from a moderate pelvic discomfort, with burning and smarting micturition and some leucorrhea. She considered these symptoms as probably due to the marital relation and said nothing of them, and after an indefinite time, about two months, they were no longer noticed. Some months after this she began to suffer from pain during menstruation and as the months went on this pain increased and became severe and depressing. Coincident with this the sexual act ceased to give pleasure and instead became repugnant, and was followed by hours of pelvic aching so that she greatly dreaded the approach of her husband.

A year after marriage her health had become decidedly impaired; she had lost much of her joyousness; the roses were fading from her cheeks; the spring and elasticity had gone from her walk; she moved cautiously to avoid pelvic jar.

About this time she was seen by a physician, who found both tubes greatly enlarged, prolapsed, adherent, and exquisitely tender. He told her of her condition and advised operation. Clinging to the hope of a possible pregnancy, operation was refused and she was treated with skill and care for more than a year. At first she seemed to improve, but later had an exacerbation of her symptoms and became more and more of an invalid. Two years and a half after her marriage I was asked to see her. She was but the shadow of her old self. Both ovaries and tubes were hopelessly matted into pus sacs and I removed them together with the uterus. She recovered quickly from the operation, so that it was considered a brilliant success. Yet, as the result of her infection she had lost what to her as a woman were the most precious things in life:—the joy of youth, for she was now essentially an old woman, her hope of maternity, and her faith in her husband.

In October last a young Italian woman was sent into my service at the Polyclinic by Dr. Carlucci. Up to the time of her marriage, six weeks before, she had been in blooming health. She had not menstruated since and hoped she was pregnant. For three days she had felt sick; for two days she had had a bloody discharge from the vagina; twelve hours before admission she was taken with agonizing pelvic cramps and fainted repeatedly. Dr. Carlucci had her sent to the hospital at once, under a provisional diagnosis of ruptured ectopic gestation.

On admission she presented a picture of profound peritoneal shock, but not of severe intraperitoneal hemorrhage. Her face looked pinched and sunken, but not particularly pale; her skin was dry; respiration rapid and shallow; pulse very rapid and hard; temperature subnormal; abdomen considerably distended, with marked rigidity below the umbilicus and great tenderness; moderate, dark, bloody discharge from the vagina; no pus in the urethra, and a denial from the husband of any possibility of gonorrheal infection; the cervix was soft and patulous; the uterus apparently enlarged; and posteriorly and laterally the fornices bulged as if from the pressure of intraperitoneal fluid.

It was evident that the woman had a virulently acute peritonitis, whether with a ruptured ectopic or not it was impossible to say. An immediate abdominal section was done. On opening the abdomen a large quantity (estimated at about a quart) of thin, greenish, turbid fluid with flakes of lymph, gushed out. The intestines were reddened; there

was no trace of an adhesion anywhere; the tubes were free. The outer half of each tube was swollen and red and from the fimbriated end thick, green pus dropped. The tubes were removed; free fluid and lymph were cleansed from the pelvis by gentle sponging and the abdomen was closed without drainage. An examination by Dr. Jeffries, pathologist to the Polyclinic, showed the pus to contain gonococci. The patient made a smooth and fairly rapid convalescence, complicated only by a disagreeably severe urethritis which appeared two days after the operation. The husband afterwards confessed to a recent gonorrhea.

SURGICAL POSTURES.

By Martin W. Ware, M.D.,
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NEW YORK.

(Continued from the May number.)

Posture in Digital Exploration of the Rectum.

The patient either on a table or in bed, assumes a knee-elbow position (Fig. 25). In this attitude the perineum becomes prominent, and the anus conspicuous. The index finger of the gloved hand can more readily be introduced into the rectum in this posture and what the finger lacks in length may be made up by crowding in the perineum with the remaining fingers of the hand. By this manipulation the examining finger can penetrate to a greater length in the bowel and reach the upper limits of the prostate and seminal vesicles. The other hand is

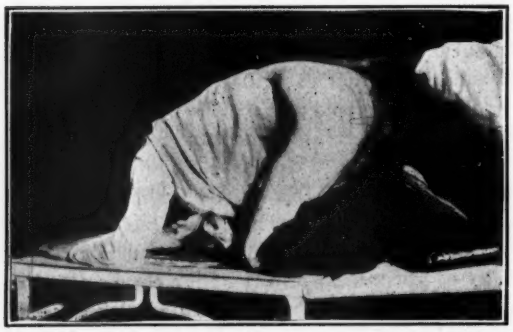

Fig. 25. Digital Exploration in the Rectum in the Knee-Elbow Posture.

placed upon the sacrum to steady the pelvis. Or the free hand may be placed upon the abdomen in the suprapubic region, and upon exerting pressure, contact with the finger in the rectum is attainable. This bimanual recto-abdominal palpation makes it possible to include the prostate in the grasp of the finger and the hand. Likewise an intravesical growth or a vesical calculus can be palpated or mapped out. To do this effectively the bladder must be emptied and the rectum cleared of its contents. Instead of the knee-chest position for digital exploration of the rectum the patient may assume a stooping posture

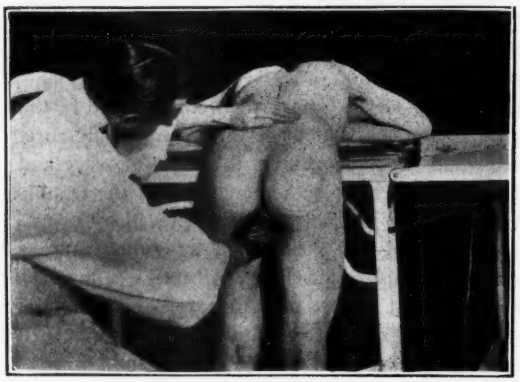

Fig. 26. Digital Exploration in the Rectum in Stooping Posture.

(Fig. 26), resting the abdomen and thorax on a table or over the back of a chair (*e. g.*, one of special design, Dr. A. G. Gerster).

Irrigation of the Urethra in Sitting and Standing Postures.

The urethra may be irrigated in either standing or sitting posture. To perform irrigation while the

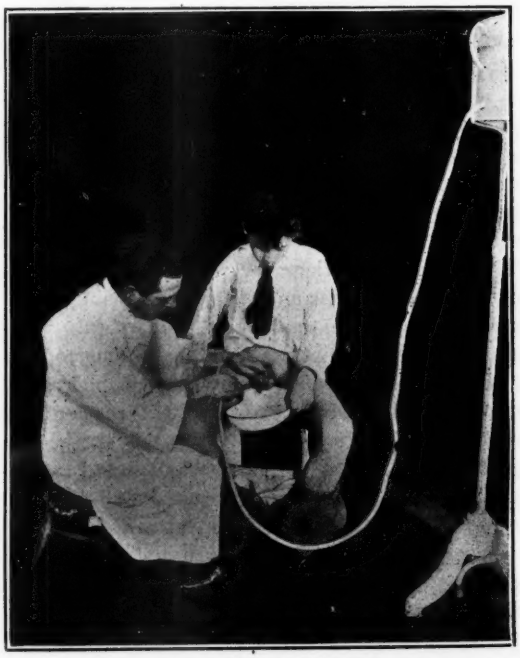

Fig. 27. Irrigation of the Urethra in Sitting Posture.

patient is recumbent is attended with the disadvantage of soiling the adjacent part with the drippings

from the urethra; and spattering of the fluid from the irrigator. The drawback to the standing posture is the chance of an attack of syncope over-

Fig. 28. Irrigation of the Urethra in Standing Posture.

coming the patient during the irrigation. Where a large number of patients require irrigation, however, work may be expedited in the standing pos-

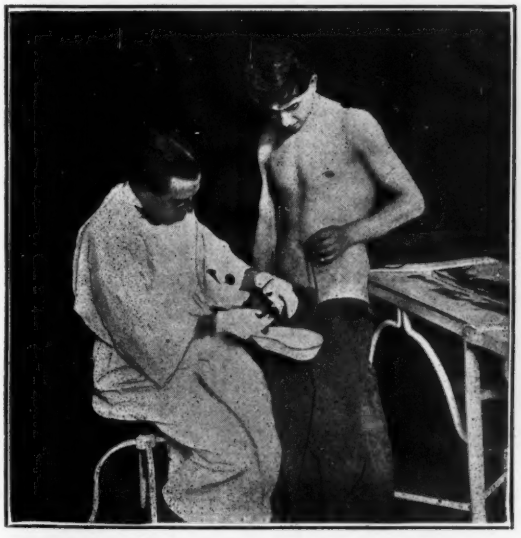

Fig. 29. Catheterization in the Standing Posture.

ture. The sitting posture is most convenient. Irrigation in the standing posture (Fig. 28), calls for a receptacle on a level with the penis to collect the drippings from the urethra, and the bladder contents. In the sitting posture (Fig. 27), this receptacle is held beneath the penis, between the thighs, with the left hand of the patient. Where irrigation of the deep urethra and bladder is performed with hydraulic pressure, and emptying of the bladder is repeatedly called for, the standing posture, as the

Fig. 30. Posture for Introducing Rigid Instruments Into the Urethra.

normal attitude during urination, is the most natural and is most conducive to neatness and cleanliness. The physician may be seated to the right in executing the irrigation.

CATHETERIZATION IN THE ERECT POSTURE.

Owing to the discomfort, pain, and prostration in the conditions that generally call for catheterization, none other than a reclining posture would seem correct. When it is known that a catheter readily enters the bladder, and an estimate of the propulsive force, capacity, and residual urine is to be ascer-

Fig. 31. Position of the Hand in Executing the "Tour de Maitre."

tained, the disadvantages of placing the patient on his back to fill the bladder, to have him arise to void, and then again resume the recumbent position to withdraw the residual fluid, are all overcome by executing the catheterization in the erect posture (Fig. 29). One hand of the patient holds

the pus basin or glass graduate to collect the urine, the other hand holds the outer end of the catheter. The surgeon, seated, holds the penis with the left hand, causing the meatus to gape. With the right hand, or with the aid of anatomical forceps held in

Fig. 32. Posture for Lithotripsy.

his hand, the vesical end of the catheter is guided into the urethra and bladder.

Posture When Introducing Rigid Instruments Into the Urethra.

Whether a sound-searcher, cystoscope or lithotrite be used, the patient under all circumstances must be in the recumbent posture.

The Passage of Sounds.—The patient lies on his back with the thighs apart, so that the handle of the instrument may be depressed as the instrument rides over the curve of the deep urethra. Rather than direct the instrument along the urethral canal, it is safer to pull the penis over the instrument. In this, the more usual procedure, the surgeon with one hand grasps the penis, and with the other directs the instrument (Fig. 30). The very experienced surgeon, and one familiar with the canal to be sounded, may resort to passing of the sound without grasping the penis (Fig. 31). In this procedure the surgeon holds the sound with the hand flexed at the wrist. By extension of the hand, combined with a spiral motion, the sound makes such an excursion as to lift the tissues of the urethra upon it, and glides into the urethra and bladder beyond. This is known as the "tour de maitre." It is a dangerous procedure even in the hands of the master.

Posture for Lithotripsy.

For the introduction of the lithotrite, the posture recommended for passing the sound is proper. Once the lithotrite is in place and its manipulation in the bladder is to begin, it is necessary to have a wide space between the table and the handle of the instrument, to permit of the greatest freedom of excursion for the operator's hand and forearm which direct the movements of the lithotrite.

The posture that best effects this is secured by elevating the pelvis on one or more cushions (Fig. 32). An elevation of the pelvis in the manner of Trendelenburg's posture is not implied, as in this latter position the pelvis is still in contact and parallel with the operating table. The thighs should be abducted, and flexed with the feet resting on the table (Fig. 32). The flexion of the thighs relaxes the abdominal wall and their abduction affords the necessary space for the lateral excursions to which the lithotrite is subjected. The elevation of the pelvis furthermore provides the space necessary for the wash-bottle, of the suction apparatus, which follows the use of the lithotrite.

Posture for Perineal Section (Lithotomy Position).

In the days when it was customary to cut for stone by way of the perineum, the patient was placed on his back; an assistant to either side of the patient grasped the legs, flexed them upon the thighs, and these in turn upon the abdomen; and the patient was brought to the lower end of the table so as to have the buttocks overhang and protrude, thus making the perineum prominent. This posture (Fig. 33), is still employed for operations on the perineum, rectum and vagina, and it has continued to be called "the lithotomy position." In the performance of external urethrotomy perineal

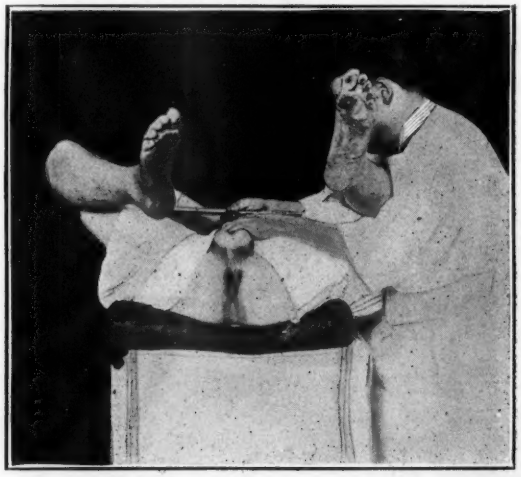

Fig. 33. Posture for Perineal Section.

prostatectomy, or lithotomy, it is desirable to place a wedge-shaped pillow beneath the pelvis to make the perineum more prominent.

By the aid of mechanical devices, such as "Clover's crutch," or stirrups attached to the table, the legs are automatically suspended, and assistants for this purpose are thus dispensed with. An assistant, however, is necessary, in perineal section, to hold the guide in the urethra, and thus make prominent the walls of this canal, in the dissection, to prepare it for the division.

POSTURE FOR CYSTOSCOPY.

It is possible to execute a cystoscopic examination of the bladder in the posture given for lithotripsy and that just described as the lithotomy position. But as such examinations are conducted most

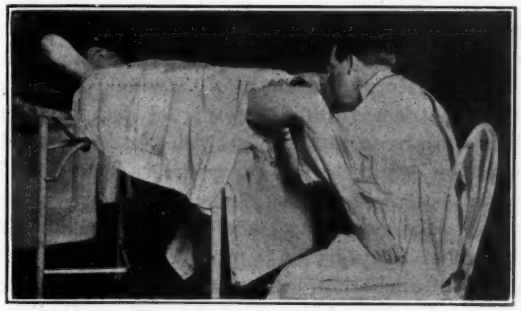

Fig. 34. Posture for Cystoscopy.

times without a general anesthetic, it becomes a matter of great discomfort for the patient to assume for a long period of time either of these positions. Yet, where flexion deformities of the thigh or leg exist these are the only positions possible for cystoscopy.

A position of choice, and one that calls for no table of special design, is illustrated in figure 34. The cystoscope is first introduced with the patient in the posture necessary for passing sounds. This done, the patient is brought to the lower end of the table, so that the buttocks are flush with its edge. The limbs hang down with the feet resting upon the thighs of the surgeon. The latter is seated on a low stool, so that his eyes are on a level with the ocular end of the cystoscope. If the table has a suitable device a slight Trendelenburg posture may be given to the pelvis as an aid in exploring the bladder or, in the absence of this, pillows may be wedged beneath the pelvis. If the surgeon does not tolerate supporting the patient's feet upon his thigh, stirrups attached on the legs of the examining table will serve as a rest for the feet.

(To be Continued.)

NEPHROPTOSIS.

By R. R. KIME, M.D.,
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The term nephroptosis should be applied to a kidney that has a range of movability beyond the normal accompanied with symptoms due to its movability. For convenience in recording cases and in diagnosis the range of mobility may be classed as first, second and third degree.

First degree.—Where half or two-thirds of the kidney can be palpated.

Second degree.—Where the whole of the kidney can be palpated and the tip of the fingers carried above the kidney.

Third degree.—Where the kidney is freely movable in the abdominal cavity.

A movability of one-half inch, especially for the right kidney is not abnormal. Byron Robinson states that the right kidney is lower than the left in 85 per cent. of cases; a movable right kidney is ten times more frequent than a movable left, and ten times more frequent in females than in males. He was able to palpate the kidney in sixty per cent. of women coming for treatment, but all did not have symptoms due to mobility.

Longyear states that there are fifteen cases of movable right kidney to one movable left. It is probable the proportion is even greater than that. He also states that the presence of the nephrocolic ligament and the action of the ascending colon and cecum explain the difference in movability of the two kidneys.

The weight of the colon and its action in expelling contents upwards, pulls down on the kidney on the right side by means of the nephrocolic ligament, the fibers of which spread out in the fatty capsule and coalesce to some extent in their attachment to the colon.

Movable kidney in general is due to the build of the patient, lax abdominal walls, tight lacing, debilitating disorders, weakening of supports, loss of fat, falls, frequent pregnancies, heavy lifting and trauma.

The liver and position of the kidney on the right side with the reasons given above make it more prone to displacement.

There is a class of slender neurotic patients, imperfectly developed physically, that are very prone to nephroptosis. Such people frequently have imperfect development of the pelvic organs and if these conditions continue until after middle age with de-

* Read before the Medical Association of Savannah, Georgia, April 17 to 19, 1907.

bilitating influences (causing general relaxation of the muscular and ligamentous tissues of the body with lax, abdominal walls), then they are fit subjects for general splanchnoptosis. In many instances nephroptosis is accompanied by splanchnoptosis or other forms of ptosis, as well as pathological lesions of the abdominal and pelvic viscera.

In such cases an operation for nephroptosis, without correcting the other abnormal conditions, will not relieve the patient. The physician must use discrimination and judgment and thoroughly examine each case for the various ptoses and pathological lesions of the abdominal viscera that may be present, especially diseased conditions of the appendix, gall-bladder and pelvic organs.

It is common in nephroptosis to have a disturbance of the action of the colon involving the appendix, also digestive and nervous symptoms.

The ptosis of the kidney and colon pulls down on the duodenum, which is practically fixed, and thus obstructs the passage of food from the stomach, which results in stagnation and decomposition of the food and dilatation and displacement of the stomach, which conditions cannot be relieved permanently until the cause is removed.

Of course the physician will recognize that dilatation of the stomach and gastroptosis are very often not associated with nephroptosis.

All cases of movable kidney do not require operation. Where the mobility of the kidney is slight, say of the first degree, without disease of the kidney or special symptoms indicative of perverted function, operation is not indicated. When the kidney is diseased and constitutional symptoms are present, due to the ptosis and perverted function of the kidney, then operation is indicated, whether the movability be of the first, second or third degree.

In many cases where the kidney is not specially diseased much good can be accomplished by abdominal supports, improving the general condition of the patient and regulating the action and functions of the alimentary canal even where the kidney is movable in the second or third degree.

When the kidney is diseased or the function is perverted by nephroptosis with nervous disturbances, indigestion headaches, Dietl's crises, etc., operation is certainly indicated. So far I have not operated upon any cases except as above indicated.

I am inclined to believe almost all cases of nephroptosis of the second and third degree, if watched long enough, will eventually show evidences of disease and perverted function of the kidney and develop constitutional symptoms. Kidney pads without abdominal support in such cases, as a rule, are an abomination, and frequently do more harm than good. The diagnosis of nephroptosis is easy to the trained hand as a rule; yet tumors in the region of the stomach, especially of the pylorus and gall-bladder must be differential and a tumor of the kidney itself must not be forgotten. In deciding if the kidney be diseased or its function perverted, repeated examination of the urine may be necessary and the use of the microscope is positively essential.

A twenty-four hour specimen of urine should be collected as the urine passed on rising is least likely to show trouble. The operation is a matter of individual preference as there are various modifications with or without dividing and utilizing the capsule proper.

Individually I feel more secure when I partially decapsulate the kidney and utilize the capsule in giving support, especially when the kidney is diseased. It has been demonstrated that decapsulation will relieve congestion, hyperemia and some cases of inflammatory involvement of the kidney. Unless it can be demonstrated that partial decapsulation does more harm to a kidney than a lesser surgical operation would, such a procedure is justifiable if the fixation of the kidney can be made more secure by the adhesions being made more permanent. If the partial decapsulation is properly done, the usual U-shaped anchoring stitches can be applied to the lower pole of the kidney and the nephrocolic ligament of Longyear can be included in stitching up the wound so as to secure the combined results of the three principal factors in anchoring the kidney, *i. e.*, the capsule, the U-shaped stitches and nephrocolic ligament.

In operating, the incision in the capsule should be made over Hyrtl's exsanguinated zone, *i. e.*, commencing at the upper pole about one-half inch posterior to the median line of kidney on the convex border extend the incision downward two-thirds the length of the kidney; then make a cross section a half or three-quarters of an inch posteriorly and one inch anteriorly or more, elevating the capsule to the same extent, giving an anterior and posterior flap for anchoring the kidney. The flaps are folded on themselves so as to give a double thickness for number two or three plain catgut sutures, two to each flap.

The sutures are introduced somewhat diagonally, those in the posterior flaps being carried well back high up in the muscular structures as close to the ribs as possible but not tied until the two U-shaped sutures in the lower pole are introduced and tied so as to elevate the kidney. Then the convex border is tied posteriorly to the incision.

The sutures in the anterior flap are so introduced as to draw the flap up against the muscle at the inner border of the incision.

A strip of gauze is packed loosely under the lower pole of the kidney for drainage, to increase adhesions and obliterate the subphrenic space, the gauze being removed in four or five days. The ends of the nephrocolic ligament are sutured into the wound in closing the incision or a loop of the ligament is sutured if it has not been cut.

Plain catgut is used throughout the operation. Silkworm-gut may be used for skin sutures if desired.

The knots of chromicized catgut set up irritation, favor suppuration and frequently give trouble.

The skin incision, the separation of the muscles and the exposure of the kidney are done in the manner best suited to the individual operator. I prefer to deliver the kidney with as little damage to its structure as possible. After dividing Gerota's capsule, then by the use of several forceps catching up the fatty capsule, the kidney can be delivered usually without serious difficulty. It may be necessary to divide and clamp the nephrocolic ligament, thus facilitating delivery of the kidney. The clamping of the ligament facilitates its suturing later in the operation. Tenacula hooked into the substance of the kidney produce trauma which it is well to avoid if possible. In decapsulating, it is well to avoid going too near the hylum of the kidney for fear of producing a urinary fistula communicating with the pelvis of the kidney. The patient is kept in bed three to four weeks and an abdominal belt is applied so as to give support to all the abdominal organs, and worn for several months. The abdominal supporter reaching from the pubes to near the ensiform cartilage, I consider very important in the after-treatment of these cases as it gives support to the abdominal viscera until the patient can be built up again and the ligaments and supports regain their tone. The correction of other abnormal conditions at the same operation and in the after-treatment of most of these cases is essential, if we desire to relieve the patient.

In that class of young women of the nephroptosis build, often there is imperfect development of the pelvic organs which must be corrected, not by mutilation of the pelvic organs (which is next to criminal), but by conservation and development along rational therapeutic and physiological lines, doing only that amount of surgery that is essential to preserve the organs for future physiological functions. One time last fall I had three such patients in my office for after-treatment and a fourth in the infirmary. All have had excellent results without mutilation of the pelvic organs. One case of this class illustrated the beneficial results of decapsulation of the kidney.

CASE I.—Miss B———, age 24, had a nephroptosis, on the right side, of the second degree and a small anteflexed uterus. She was extremely nervous, had indigestion, her menstrual periods were irregular, at times there were granular and hyaline casts and small round epithelial cells in the urine. She had a fall from a street car some six months previous. The patient was sent to the Tabernacle Infirmary for operation, but developed a fever which continued for three or four weeks, followed by scantiness of the urine, for days amounting to but two ounces. At one time she passed only two ounces in seventy-two hours, and yet there were no marked uremic symptoms. Vomiting was persistent after the fever subsided and the urine continued small in amount. At times the mucus and bile vomited contained streaks of blood. There being no positive evidence of typhoid fever or ulcer of the stomach operation was performed. The uterus was curetted, the kidney decapsulated and anchored in the usual manner, the organ punctured in numerous places and a gauze drain inserted at the lower angle. The urine increased within forty-eight hours and she was soon passing six to eight ounces daily. She is now practically well except that she has to wear a uterine drainage stem to stimulate the development of the uterus.

To illustrate the amount of work that can be done with safety on these patients when properly prepared, I shall report two cases operated upon lately at the infirmary.

CASE II.—Mrs. B———, age 28, is the mother of two children, the youngest seven months old. The right kidney was movable to the third degree. The patient had indigestion, constipation and headaches. The uterus was retroverted. The right ovary was diseased. At times there were hyaline and granular casts in the urine. The uterus was curetted, the kidney decapsulated and anchored in the usual manner, and the abdomen being opened at the outer border of the right rectus muscle, the appendix was removed. The right ovary was removed, the ligament shortened, a cyst in the left ovary punctured. The patient recovered and regained health rapidly.

CASE III.—Mrs. E———, age 26, of a nephroptosis build, is the mother of one child 16 months old. The right kidney was movable to the third degree. There were pain in back, Dietl's crises, headaches, specks passing before the eyes and marked indigestion. She had one attack of appendicitis,

was anemic and had not been out of bed two months at a time since her baby was born. At one time she was in bed for three months at the hospital for supposed ulcer of the stomach. The uterus was retroverted, both ovaries enlarged and tender. At times there were granular and hyaline casts in the urine. At frequent intervals she had intense headaches and vomiting and was able to digest scarcely any food for days. The kidney was decapsulated and anchored. An incision was made in the right rectus muscle, the womb brought forward, both ovaries resected and both round ligaments shortened, being folded on the anterior wall of the uterus, and the appendix removed. It is now two months since operation. The patient is up and about, wearing an abdominal belt. Her appetite and digestion are good and she is gaining health rapidly.

I fit all cases with abdominal belts, reaching from the pubes to near the ensiform cartilage, and instruct them to wear the belt constantly when up, until it wears out. I exclude all diet likely to disturb the kidney, especially pork, beef, stimulants, tea and things fried in grease, and advise patients to live principally on milk, soft boiled eggs, light bread, corn bread, well-cooked cereals, fruits, vegetables, a reasonable amount of oysters, chicken and stewed, baked or broiled fish, cheese well masticated and plenty of butter. Every means is used to build up the patient's strength, and increase the deposit of fat in the tissues.

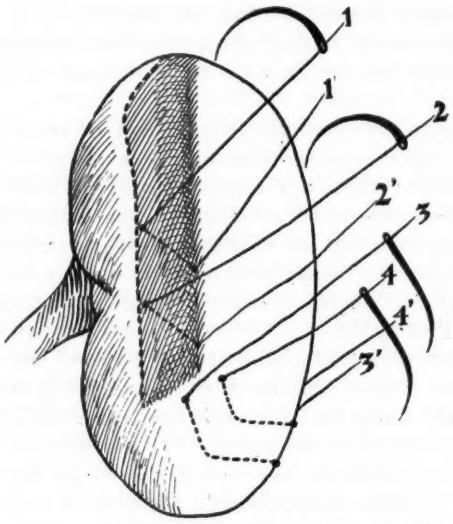
I prefer the incision at the border of the right rectus muscle when opening the abdomen, because all parts of the pelvis and abdomen can be reached from the one incision for any work that is necessary to be done.

The abdominal incision is closed with plain catgut and the transversalis fascia by figure of eight sutures of black silkworm-gut, as used by Murphy.

If necessary, and the space is sufficient, the appendix and gall-bladder may be reached from the lumbar incision made to reach the kidney, but such work is difficult and dangerous if there is much disease of the appendix. Besides the abnormal condition of the pelvic organs could not be corrected through such an incision. Following the operation, leucocytes, kidney epithelium, hyaline and granular casts appear in the urine, which usually clears up in from six weeks to two months unless the kidney is seriously diseased.

Stitches 1 and 2 are introduced well back, near the twelfth rib, through the quadratus lumborum and erector spinæ muscles. 1′ and 2′ are now threaded on needles and carried through the muscles a half inch lower and the same distance away from the incision, but not tied until the two U-shaped stitches, 3 and 4, are introduced and tied.

Stitches 3 and 4 are now introduced through the inferior portion of the incision, coming out through the quadratus lumborum and erector spinæ muscles about one inch below stitches 1 and 2. Then the free ends, 3′ and 4′, are tied to 3 and 4, thus lifting the kidney upward and tilting it backward to near



Posterior Surface of Right Kidney.

its normal position in the body. Now stitches 1 and 2 are tied and the wound closed with number 2 plain catgut, including portions of Gerota's capsule and the nephrocolic ligament, the strip of gauze being introduced beneath the lower pole of the kidney at the proper stage of the operation so as not to carry the stitches through it. Large, full, curved, round needles are used except in the U-stitches, and in the over and over skin stitch.

Poisoning by Cocain Injection.

If we go through the literature of cocain poisoning, we find that it was not always a large dose but always a solution of high concentration which was used. This in fact is the point. Cocain, as well as other remedies of this kind, has general toxic effects only when it is quickly absorbed, so that at one time a sufficiently large dose is transferred into the circulation. This is only possible when a solution of high concentration is used. Experiments I made on animals made me sure of this fact. Let us keep in mind the rule, no solution of high concentration! Never use for injections a cocain solution beyond one per cent.—Bernhard Hahn in *Northwest Medicine.*

SOME MEDICO-LEGAL ASPECTS OF OCULAR INJURIES.

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The economic importance of acute vision and sound eyes, the no less real value of good looks and the evidence of health in the competition for employment, are factors which we are apt to overlook or to underestimate until they have been jeopardized or more or less seriously impaired. Partial or complete loss of vision, and disfigurement of the eye are so often due to injury not only in the industrial population but in all walks of life, that the resulting incapacity or diminution of wage earning power and the loss of time, expense, and suffering are frequently made the basis of litigation. Suits for recovery of damages are brought against employers, transportation companies and other common carriers as well as against third parties who have no judiciary or other special relation to the plaintiff. The legal questions of liability, contributory negligence, and other issues of fact are intimately connected with purely medical considerations, such as the determination of the amount of loss of vision or the degree of injury sustained, involving the factor of simulation and aggravation of symptoms, and the no less important question of a scientific determination of impairment of wage-earning capacity due to loss of vision, disfigurement, or both.

The economic value of vision has been made the subject of study by a number of investigators, and more or less complex formulæ have been devised to calculate the diminution of earning capacity due to partial or complete loss of vision of one or both eyes. Most of these determinations are based on conditions observed in foreign countries, notably Germany, which have an Employer's Liability Law, and are expressed in terms of an annuity to be granted rather than as a statement of the cash value or damage value. The previous earning capacity or income of the injured person is taken as a starting point of these calculations, whereas in this country, these factors are rarely interposed in mitigation of a claim. An analogy is afforded by the accident insurance companies, which pay definite fixed sums for loss of one or both eyes, irrespective of the income of the assured, and so eliminate the economic question for all practical purposes. Juries are apt to follow this lead and to render a verdict on the basis of the amount sued for and the evidence of actual injury or loss rather than to take into consideration any theoretical determinations. Testimony as to the economic value of vision is rarely offered in courts of law, and when offered is usually contradictory, as the factors are numerous and complicated.

As in all negotiations subject to adjustment it is not unusual to see a claim made which is far in excess of any equitable figure, with the expectation that a compromise will be made and the resulting allowance approximate a fair amount. Most accident companies allow from $2,500 to $5,000 for the loss of an eye, depending on the premium paid for insurance and many of them allow double compensation in case of injury due to accident while in certain classes of vehicles. This practice seems to offer a more practical basis for the determination of compensation for damages than the tables mentioned above, as they have been established as a minimum after competition among the various companies. They have thus been subjected, as it were, to a practical test. Furthermore, these figures are matters of common knowledge of which a court may take cognizance, and they require no elaborate demonstration.

It is difficult to estimate the effect of the loss of an eye in figures. The diminution of actual vision is but one of the items of debit, and we must take into consideration the very actual importance of the binocular field of vision in skilled labor and in ordinary life as a means of protection. The man with one eye is more apt to be injured and less apt to be able to guard against danger. This applies not only to injuries of the remaining eye but to all accidents. In the reduplication of the organ of vision we see one of nature's factors of safety (Meltzer) for the organism. The loss of an eye wipes out this margin and greatly increases the seriousness of even the slightest affection of the one remaining eye. The wearing of an artificial eye is not an asset in competition for employment, and any actual deformity due to injury of the eye may greatly interfere with the obtaining of a remunerative occupation. These two factors must be borne in mind in considering a fair allowance made for them in all cases of loss of vision, even if it should appear that the injured person is able to carry on his former work without sufficient vision.

In any case of injury to the eye which may become a subject of litigation, it is incumbent on the attending physician to make a full and careful examination and to keep a record of his findings. Both eyes should be tested and any correction by glasses noted. The possibility of simulation or of aggravation should be borne in mind, and those who have

to deal frequently with accident cases should familiarize themselves with the tests for its detection. While complicated procedures are occasionally required to unmask a simulant, the latter is rarely of a high degree of intelligence, and the simple tests will suffice. They have the additional value of being demonstrable to a jury, whether the result has been positive or not. A claim of binocular blindness or amblyopia can usually be reduced to its actual proportions by tests with confusion charts in which the letters are not arranged in regularly diminishing sizes, or by variation of illumination under control of the examiner's own, supposedly normal, vision. Simulation of a monocular visual defect is more frequent and may be detected by tests with prisms, mirrors, or stereoscopes, all of them having the same basic principle, in that the subject is kept in ignorance as to which eye is being tested. In not a few cases, the objective examination alone will lead to a fairly accurate judgment as to the amount of vision retained. Evident opacity of the media, or changes in the fundus will prepare us for a certain degree of amblyopia, and in these cases there can be no simulation. Any aggravation can easily be determined by repeated and varied visual tests. In case of amaurosis without visible changes in the eye, the possibility of disease of the nerve must be considered. The visual fields, color perception and pupillary reaction will give valuable information as to the nature and seat of the lesion.

In monocular blindness, particularly, the last-named factor should be carefully determined. Under normal conditions, both pupils change in size when the total amount of light is varied, no matter whether it enters one eye or both. Thus, if one eye be shaded, both pupils will dilate, the one by direct, and the other by consensual, reaction. Contraction of both pupils will take place in exactly the same manner, if light be thrown into one eye, even if the other be completely blind. The only possible exception to this rule is a mechanical interference with the iris of the consensually reacting eye, say by old iritic adhesions or by accommodation paralysis. These sources of error may be excluded by the diagnostic instillation of eserin or pilocarpin to contract and of atropin to dilate the pupil. Accommodative paralysis may be excluded if both pupils contract with fixation of a near object and dilate in distant vision. To exclude the possibility of atropin having been used to cause dilatation, it may be necessary to keep the eye bandaged and the patient under supervision. In certain cases of indirect injury to the optic nerve by fracture through the optic foramen, a condition which has not infrequently been observed after a fall upon the head, a blow on the temple, or even a marked concussion by a fall on the feet or buttocks, the pupillary reaction alone will demonstrate actual blindness and the site of the lesion. In these cases the pupil is usually larger than its fellow. It reacts to convergence and accommodation when an object is fixed with the other eye. It remains absolutely immobile when shaded and when illuminated if there is no perception of light, or reacts sluggishly or with a slight movement if vision has not been completely destroyed. At the same time, the pupil of the other eye also fails to react. This lack of consensual reaction in the sound eye is perfectly natural, as there has been no actual increase in the amount of light stimulating both eyes. The light entering the injured eye was not perceived, and the test is supposed to have been conducted in such a way that the illumination of the sound eye was not varied. This point must always be borne in mind. If now, the sound eye be illuminated, the pupil of the other will contract, even if it be in the dark, and, conversely, it will dilate, even under brilliant focal illumination, if the sound eye be shaded from the light. This symptom complex, with the almost invariable evidence of optic nerve atrophy, renders us practically independent of any statements by the patient. The history of the accident, with well authenticated evidence as to the development of blindness, enables us to make an absolute and accurate diagnosis. The suddenness, completeness and permanent character of the loss of vision make it possible to exclude all other conditions. The pupillary phenomena are easily demonstrated and explained to a jury and carry the conviction which they deserve.

Attention has been called, of late, to the inconsistencies and contradictions in expert medical testimony, and it cannot be denied that the medical expert is looked upon with suspicion as one whose views will be colored, if not directly determined by, the interests of his client. While there is undoubtedly and unfortunately good ground for such an attitude, which increases our obligation in regard to absolute truthfulness and fairness, another aspect of the matter has received little or no attention. I refer to the point of view of opposing counsel. A well-known lawyer boasted in my hearing that he could read up enough in twenty-four hours to confuse and baffle any medical expert he had ever met. This is merely an indication of the attitude assumed in approaching a matter which should be decided by coöperation rather than by antagonism. It seems to be the

object of some legal representatives not to elicit all the truth, but only as much of it as may be of value to his client, and to minimize or discredit any testimony or opinion which may be at variance with his needs. If the attorney were seeking for truth he would be able to count on the assistance of the expert, but as it is, a duel of wits is the inevitable result. The advantage is all on the side of the experienced and adept cross-examiner; for, no matter how correct and truthful the statements of the medical witness, there is almost invariably some point, perhaps of minor importance, some personal factor foreign to the issue, some hypothetical discrepancy which can be nursed and exaggerated or twisted and turned to serve its purpose. In a recent case in which I had given expert testimony as to a condition of absolute, sudden, and permanent blindness, the opposing attorney conducted his cross-examination in such a way as to make it appear possible, if not probable, that the practice, admitted by the injured party, of buying glasses from street vendors was responsible for the loss of his sight. When this contingency was denied, it was asked whether oculists advise their patients to follow such a practice, whether it was not a fact that ocular disease was often caused and many an eye destroyed by it, and so on. In this particular case it was, fortunately for the interests of justice, an easy matter to make the jury understand that while it is neither prudent nor wise to pick up glasses at random, this practice was foreign to the issue in so far as the patient's malady was concerned, and that while eye-strain and perhaps discomfort, headache and other untoward symptoms might be attributed to the careless wearing of glasses, organic disease was an extremely rare result, if, indeed, it could be proven in any case.

I know that there is a school, or rather a class of one, in ophthalmology which brings all ills that flesh is heir to into relation with eye-strain, curable, incurable, or induced by faulty correction of refraction error, and that this false view is sedulously disseminated in scientific and lay periodicals. It seems to me that it is time to call a halt, and to lay stress on the fact that the main objection, and one sufficiently vital to absolve us from the necessity of inventing false issues, to the correction by non-medical hands is the danger of failing to recognize ocular disease, present or threatened, in an eye whose possessor thinks he needs merely a change of "specs." Unfortunately the public and especially the legislators, most of whom are lawyers with their own opinions of medical testimony, can see nothing but selfish jealousy and a sordid trade-interest in the opposition of the profession to optometrists, opticists, refracting opticians, and *id genus omne*.

TRAUMATIC NEUROSES.

By JAMES B. MORGAN, M.D.,
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I am aware that it is a dangerous venture for a general practitioner to sally forth into the tangled web of nervous diseases. Where, in all the domain of practical medicine is found so many unmarked paths, and such wide divergence, in established routes? The fact that a person may be pronounced insane by one set of alienists, and perfectly sane by another set, is but a crude illustration of the divergence of opinion among neurological experts.

If such wide differences of expert opinion occur in the very elemental principles of mental disorders, where must it of necessity lead, in the finer and nicer distinctions between traumatic neuroses and simulation? The fact, that railway surgeons, have more to do with these often obscure neuroses, not to say psychoses, than any other class of special surgeons, makes this subject of peculiar interest to them. So many neuroses, the result of real or feigned railway injury, are referred to us for equitable direction, that it is a matter of pride and necessity for us to inform ourselves on these subjects.

The general public may have good cause for many of its strictures on prompt service and proper railway control, but the most pessimistic anti-railroadist cannot complain that there has been any curtailment or abatement in that branch of railway industry known as "personal damage suits." This feature has outgrown all others combined during the past five years. The crowded conditions of travel and commerce, have resulted in the railroads injuring a greater number of persons in recent years. These accidents were in some instances unavoidable; and in others, perhaps, the result of defective management.

A number of persons, claiming to be injured in these accidents was actually injured—there were palpable, visible evidences of injury at the time, followed by indisputable, immediate effects of such injury. Such injured persons received, and have a moral and legal right to receive. damages in proper amount to compensate them for all inconvenience and injury. I regard it as an important part of the duty of railway surgeons, to aid such injured persons in the protection of their rights. If this unfortunate but honest class of injured were the only ones who come forward with claims for

damages for personal injury, damage suits against railway companies for personal injury would almost disappear from the dockets of our courts.

However, they constitute but a small percentage of the number who file suits for damages. While not more than one in seven or eight of all the cases of claims for personal injury ever come to trial, yet, of the number filed and left to the verdict of a jury, not twenty per cent. can show evidence of old structural injury, or demonstrate impairment of function. Eighty per cent. of this class of litigants, after failure in attempts to compromise, come to the bar alleging some form of traumatic neurosis.

With a shrewd lawyer in charge, or associated with the case, these seekers after corporate compensation come to us with a carefully rehearsed assortment of subjective symptoms, a limp or a drag, a shaky voice, a long face, and a general appearance which harmonizes with the voice and face.

Some of this latter class of litigants are injured, some imagine they are, but experience seems to decide that a goodly proportion are nothing but plain malignerers. Most of these cases have been treated, or, at least seen, by the local railway surgeon, but if not, he is almost sure to be called as a witness. In few situations in life is our boasted medical knowledge subjected to a more crucial test. Without definite ideas, exact information and a carefully studied history of the case, we can be the means of doing grave injustice to some honest, deserving litigant, or on the other hand, become *particeps criminis* to robbing the railroad. Many damage suits are won through our ignorance or carelessness, and many are brought because the attorney for the plaintiff has accurately gauged the mental caliber of the railroad's surgeon. It goes without saying that all of us have not the time nor the inclination to become nerve specialists, even allowing that we have the ability to do so. But we can all study our cases, and we can faithfully record the results of these studies. They often throw much light on unsuspected future developments. Few damage suits are brought to court so quickly that we cannot examine and re-examine the patient; and the more we examine them the better. In addition, we can carefully review our notes and study every detail of the case. This will enable us to do justiceand to act intelligently. It is the sum of these individual observations, carefully noted and intelligently recorded, that make definite, scientific knowledge.

One of the important lessons learned from personal experience is that most persons who suffer real, or supposed injury in railway or other accidents, demand compensation from the companies or individuals responsible. Neither the extent of injury, nor the social position of the claimant, appears to exert an influence in the frequency of the demands, or the amount of damages claimed. When an organic injury is quickly succeeded by symptoms of well recognized pathological conditions in the nervous system, there is rarely any question as to the propriety of associating the two occurrences in the direct relationship of cause and effect.

But how few of the cases we see are of this nature? The larger number of claims are brought for trivial injuries, where there can be discovered no present or past evidence of any organic or structural lesion. Herein lies the difficulty in diagnosis and prognosis, and the necessity for full, painstaking information. For every bold-faced malignerer presents almost identically the same general appearance and group of symptoms as are found in the case of a true traumatic neurosis.

For example, one claimant comes forward with an alleged incurable injury to the ankle, the result of a sprain from stepping from the steps of a car which were too high from the ground. He limps, his ankle is swollen, and the slightest touch gives excruciating pain. In a case of this kind, insist upon examining him several times before he comes to court, and under an anesthetic, if possible. Notice the character and extent of the swelling, and look for evidences of recent constriction about the ankle. Apply an Esmarch bandage from the toes to the upper limit of the swelling. An old edema offers much more resistance to the bandage and the part cannot be entirely reduced to normal size. When the bandage is removed, quickly palpate, and freely manipulate the leg, as sensation is temporarily suspended. Try the several reflexes. After thorough examination, in nine cases out of ten, if you cannot assure the jury that the claimant is a fraud, you can convince them that the injury is only temporary and will soon be relieved under proper treatment.

Monoplegia of the arm is a very common manifestation of a familiar form of traumatic neurosis. I do not refer to the impairment of nerve force resulting from a fracture or dislocation at, or about, the shoulder, or to any other form of trauma, where organic changes were severe or evident. But I refer to one of those little peculiar blows on the shoulder caused by falling against the side of a car. Such a condition can occur in various other ways, but the effects are pretty uniform. There are usually no bruises or abrasions at the time of the acci-

dent, but if any external evidence of injury is found or described, it is of the most superficial nature and rapidly disappears. This brachial monoplagia, or brachial neurosis develops best after an appreciable period of "meditation." Then it is discovered that there is a stiffness and soreness about the shoulder which dates back to the time the shoulder was struck. Having started, the symptoms rapidly grow worse, the arm becomes paretic; there is an inability to raise the arm higher than at a right angle to the body; and hence it is allowed to hang limp and useless by the side; and from this disuse the muscles atrophy. Railway surgeons seldom see these cases until a suit is pending for total or partial loss of use of the arm. Then from lack of history, and from the picture presented, we are apt to conclude that little or nothing can be done to relieve the condition.

A careful examination will often modify or change our prognosis. The x-ray is a great help here, enabling us to determine that the bony parts are in a normal condition and position. It is well to remember that a monoplegia, in the leg or the arm, as a result of spinal injury, is practically unknown; for we know that spinal centers for the movements of any one limb extend over several segments of the cord. Any injury which affects a sufficient number of segments of the cord to cause a monoplegia will be accompanied by paralysis of other parts. Excluding injury to the spine, the cause of the condition must be from some cerebral lesion, or a neuritis of the nerves of the arm. The history of the injury, and the general conditions present, will soon cause us to abandon cerebral disease as a possible factor. Hence, we find that our brachial neurosis, is in fact, a brachial neuritis. As we know that a neuritis may and usually does affect special nerves, only certain groups of muscles which are innervated by the inflamed nerve or nerves, will be paralyzed, and the muscles not supplied by the nerves will be found to be uninvolved.

I have found such a condition in three cases. Two of the patients were cured, and the third one was killed before his case came to trial.

I mention this form of neurosis for two reasons, first, because a neuritis of the musculo-spiral, median, or any other nerve, is a curable disease, and not, therefore, a permanent disability; and, secondly, because monoplegia is one of the most common manifestations of traumatic hysteria and, therefore, it is well for us to be on our guard against exaggeration and imposture.

A word about the neuroses which are so frequently mentioned, and commonly regarded as the direct, or indirect effects, of so-called "spinal concussion." For the sake of clearness, it may be well to say in the outset, that such neuroses as depend on spinal concussion as their starting point, must of necessity be feigned or imaginary since no such pathological condition can be, or has been found in any way answering to the description of spinal concussion. In fact, no lesion of the kind exists. There may be a fracture, or a dislocation of the spine, producing perhaps structural changes in the cord, with hemorrhage around, or in this delicate structure, causing pressure or compression, but we have at the same time all of the attendant symptoms and physical conditions which invariably follow such gross lesions. There is little chance for simulation, exaggeration or mystification.

The immediate effects are evident, and the sequelæ can in a measure be foreseen and, therefore, intelligently met.

The term "concussion of the spine" is almost universally employed in legal papers, when reference is made to organic or functional injuries of the spine or cord. An attorney for a claimant would feel handicapped, and derelict in his sacred duty to his client, if he could not in sonorous oratory elucidate to the jury a few of the awful disasters which have resulted, and will, result from concussion of the spine. To Dr. Urichsen, the first important writer on railway injuries, we are indebted for the creation of that medical monstrosity, known as "railway spine." Nothing but confusion can result in the mind of anyone who begins the study of traumatic nervous disease by a perusal of his book. His theory of concussion of the spinal cord, as a pathological entity, was purely hypothetical. Microscopic technic is much more advanced now, than it was at the time he wrote, and yet it has not disclosed molecular pathology, nor such a thing as molecular structure. Molecular disorders still remain in the domain of speculative science.

The elimination of this complex catch-all—"spinal concussion," from the list of traumatic nervous diseases, would greatly simplify many a doubtful diagnosis and obscure neurosis, in alleged injuries to the back. The secondary manifestations of nearly all railway accidents, are commonly referred to the back. Injuries to the head, trunk or limbs, seem to ultimately result in neuroses of the back. But whatever our present difficulties are, or whatever new complications the future may develop, we should be properly thankful that we cannot again be frightened by the same old ghost—"spinal concussion."

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WALTER M. BRICKNER, M.D., Editor

NEW YORK, JUNE, 1907.

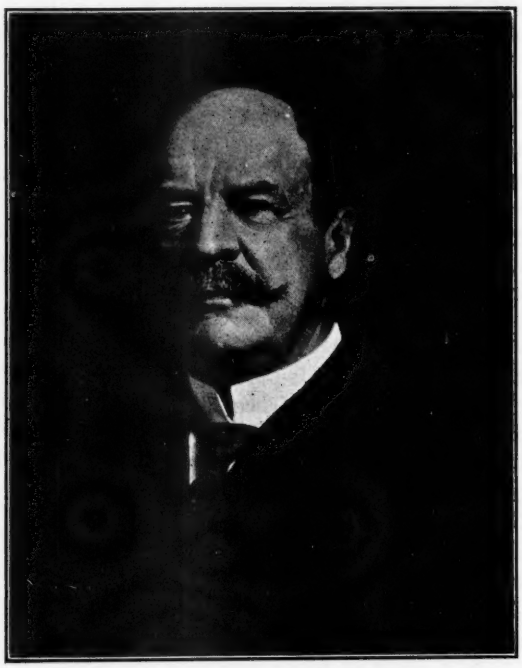
THE NEW CHIEF EXECUTIVE OF OUR ORGANIZED PROFESSION.

On June fourth, at Atlantic City, the American Medical Association will induct Dr. Joseph D. Bryant into its office of president, to which position it elected him at the Boston session a year ago. The plan of the Association is a most excellent one, to have at all times both a president and a president-elect, each holding those respective titles for a year. Thus, by the coöperation of the president *de facto* and the president-to-be, there may be secured the continuous and harmonious action that makes for the development of the best policies in our national organization. In addition, each incumbent to the presidency has the benefit of a year of apprenticeship and preparation for his important duties.

In the present instance, however, special executive training was hardly needed. The titular leadership of the medical profession of the United States comes to Dr. Bryant as but a higher tribute in a succession of executive honors to which his colleagues have called him. He has held, among other important positions, the presidency of the New York Academy of Medicine, of the N. Y. State Medical Association and of the N. Y. State Medical Society.

As professor of surgery in the University and Bellevue Hospital Medical College, as surgeon to Bellevue Hospital, and as the author of the most comprehensive American work on operative surgery, Dr. Bryant has been a teacher of the surgical art for many years.

The presidency of the American Medical Association is about to pass from one to another surgeon of eminence and international reputation; and in the transfer the office will suffer no loss of the dignity or the luster with which William H. Mayo has adorned it.

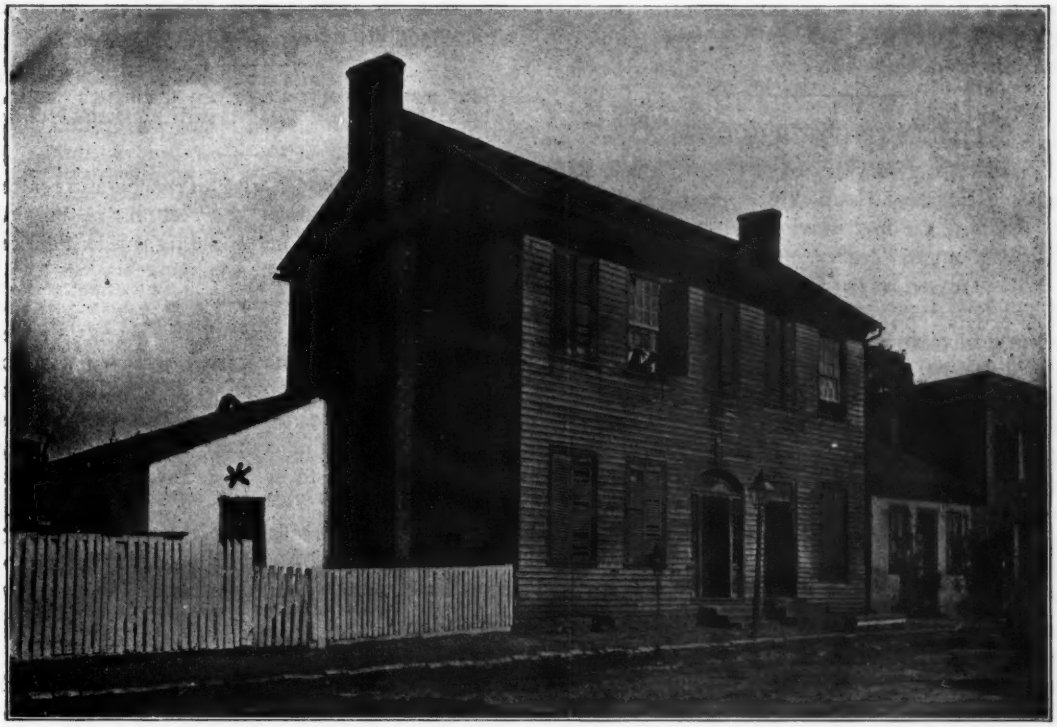


JOSEPH D. BRYANT.

SURGERY OF THE NERVOUS SYSTEM.

Progress in surgical thought and procedure has again come to the fore after a more or less quiescent period, during which time medical research had attained a supremacy. The advancement along new lines is shown no more plainly than in the surgical work that is now being done on the nervous system.

Horsley, in England, in the early '80's, taught us brain localization; Ballance and Stewart have taught us to make use of the hypoglossal nerve in facial palsy; Cushing of Johns Hopkins, has added materially to our knowledge of brain tumors; Hartley of New York, has made it possible for us to operate on the Gasserian ganglion; Taylor, also of New York, has experimented with the popliteal nerve in anterior poliomyelitis and the brachial plexus in birth palsy; and several other surgeons have added many new facts to our knowledge of surgical diagnosis and the technic of operations on the nervous system. Laminectomy for tumors of the spinal cord and for pressure due to fractures and caries of the vertebræ, resulting in transverse myelitis and conse-



THE HOME OF EPHRAIM MC DOWELL IN DANVILLE, KY.

The * shows the room in which, in 1809, he performed on Mrs. Crawford the world's first ovariotomy.
[Photograph made by William Wade and furnished through the courtesy of Dr. W. H. Cooper, Oakmont, Pa.]

quent paralysis, is an established procedure. Trephining the skull for fractures, extradural and subdural hemorrhage, brain tumors, brain abscesses and brain cysts has become a part of surgical routine.

But the greatest possibilities of cure, in cases which have always defied us before, are in the various nerve anastomoses which will enable us to once more bring about the symmetry of a face, to ward off an impending panophthalmitis because of paralysis of the eyelid and subsequent infection, to make the lame sure of foot again and permit a useless arm to become a healthy member of a body which probably needs its every integral part.

Not only is there every possibility that nerve anastomosis will bring about curative results but its accomplishment is very apt to revolutionize the old theory of the central localization for peripheral nerves. Not many years ago, from a series of experiments, Ballance and Stewart of London, brought forth the theory that peripheral nerves were more or less dependent for their nutrition on nuclei situated in the perineural sheath. And nerve anastomosis is bound to teach us that the cells lying in the anterior horn of the spinal cord are not differentiated cells with a special function for each nerve but are a general class of cells upon which all the peripheral nerves depend for nutrition. On this theory, Taylor and others have been able, for example, to make the anterior horn cells governing the external popliteal nerve take on the function of the dead anterior horn cells of the internal popliteal nerve in cases of anterior poliomyelitis.

If the theory ever becomes a fact that all nerves govern certain functions because of their peripheral termination, it might not be too presumptuous to suppose that the nerves of special sense derive their special function because of their peripheral termination. Thus, the optic nerve governs sight because of its termination in the retina and the auditory nerve governs hearing because of its termination in the auditory mechanism. The hypoglossal nerve has already been made to anastomose with the facial nerve and this is considered among the special cranial nerves. If it is shown that the cells in the cerebrum are merely relays and terminal stations in a huge and complex nervous mechanism, the possibilities of nerve surgery are without limitation.

In the next decade there is every reason to sup-

pose that the serious work that has been going on along these lones will place surgery on a still higher plane than it occupies to-day. H.

THE SCENE OF THE FIRST OVARIOTOMY.

It lacks but two years of a century since, in a back settlement of Kentucky, Ephraim McDowell, by "making" the first ovariotomy, laid the foundation of abdominal surgery.

At this season of the meetings of national medical societies, so largely occupied with discussions of the surgical treatment of abdominal diseases and its complicated paraphernalia of asepsis, it is interesting to glance a moment at its crude and humble birthplace.

The photograph of the McDowell home in the preceding page was taken recently, but it shows the house practically as it was in 1809, when Mrs. Crawford traveled to it sixty miles on horseback to submit to the first real laparotomy in history. Only the fence has been rebuilt, over which hung the angry crowd threatening to kill the fearless man who, in the small one-story lean-to, was performing "the fearful and formidable operation of gastrotomy with extraction of the diseased ovaria."

Surgical Suggestions.

A large abscess in the ischio-rectal region may communicate with an infected dermoid cyst at the base of the spine.

A chronic cystic swelling in the neighborhood of a joint is in the majority of instances a distended bursa.

A tumor on either side of the vertebral column with a slight bulging in this region and scoliosis, is often a perinephritic abscess. But if cord symptoms are present, a sarcomatous growth of the vertebræ should be kept in mind.

In case of sudden pulmonary infarct, a patient should always be examined for hemorrhoids. A thrombosis of one of the veins of the prostatic plexus may also be the cause.

During the course of a pneumonia, severe pain in the leg is indicative of the deposit of a septic embolus in the lumen of one of the veins, which often results in an ascending thrombosis and phlebitis, necessitating amputation.

A synovitis that persists despite careful treatment should arouse suspicion of tuberculosis.

The cessation of severe pain during the course of acute appendicitis often means perforation.

If there is a sudden rise of temperature after appendicectomy, examine the rectum. A bulging of the wall of the rectum on the right side indicates the formation of a pelvic abscess.

Vomiting, secondary anemia and absence of free hydrochloric acid in the gastric juice—a triad of symptoms at once suggestive of carcinoma ventriculi—may occur as a result of chronic nephritis. Especially if the urine contain no casts or albumin is the observer apt to be led astray.

Small incised wounds over the eyelid are very prone to infection. Instead of sewing up the wound immediately, put on a wet dressing and wait twenty-four hours.

Marked exophthalmos with a purulent iritis may be an embolic condition (metastatic choroiditis) due to septic infection, *e. g.*, of the uterus, as after an induced abortion.

By pressing lightly with the flat end of a wooden toothpick in the region of a foreign body on the cornea, it will often come away. The conjunctiva should first be anesthetized with a solution of cocain.

Constant lacrimation with no other signs or symptoms may be due to a chronic dacryocystitis. Removal of the lacrimal sac will often effect a cure.

Severe pain in the knee joint with redness and high temperature may mean an inflammatory condition of the joint or adjacent bone, but it also may be due to a phlebitis of the superficial veins of the leg.

A patient should not be considered neurasthenic because he cannot walk after union of a fracture of the os calcis. There is often considerable pain due to adhesions and the incorporation of portions of the tendo Achilles in the callus.

Clear fluid in the pleural cavity is not always indicative of lung or pleural disease. It may be due to a new growth of the mediastinum pressing upon the venæ cavæ.

Book Reviews.

Anesthetics and Their Administration. A Text-Book for Medical and Dental Practitioners and Students. By FREDERIC W. HEWITT, M.V.O., M.A., M.D., Cantab., Anesthetist to His Majesty the King; Physician-Anesthetist to St. George's Hospital; Consulting Anesthetist and Emeritus Lecturer on Anesthetics at the London Hospital, etc. *Third Edition.* Octavo; 627 pages; 72 illustrations. London: MACMILLAN & Co. New York: THE MACMILLAN Co., 1907. Price, $4.00 net.

This standard work, which has been before the profession for fourteen years, is too well known to need review. Almost rewritten in the second edition (1901), it has again been subjected to considerable revision. This has been in the form of incorporating new material, and condensing other sections to partially accommodate it. This third edition contains 100 pages more than the second.

One of the subjects introduced is that of *acid intoxication following narcosis.* Hewitt refers to the publications of Guthrie, Kelly, Beattie and others, reporting cases of acidosis following anesthesia and of "delayed chloroform poisoning." He makes no attempt to add to their studies, however, since his own experience with the condition was limited to one case.

Ethyl chloride narcosis occupies a chapter in this edition. The author recommends for its induction "the closed method," thus agreeing with most others that administration on open masks is unsatisfactory and wasteful. He says nothing of intermittent spraying into the inhaler, but describes only methods by which a fixed amount of ethyl chloride is at once or gradually liberated in the apparatus. "Should it be desired to prolong anesthesia, the inhaler, charged with more anesthetic, must be intermittently applied, care being taken to avoid inconvenient recovery on the one hand and overdosage on the other." In the opinion of the reviewer intermittent spraying is a superior method to this—regulating and maintaining the narcosis as with chloroform, and thus avoiding both "overdosage" in brief operations and "inconvenient recovery" in longer ones.

Much recent matter concerning the physiological and pathological effects of anesthetics (especially chloroform) will be found incorporated at various places throughout this edition.

Hewitt's work, to be sure, represents English practices. Thus the apparatuses most popular in Great Britain are not those most popular in this country. Again, the anesthesia mixtures are probably more generally employed in England than in America. These differences, however, are in form, rather in substance. They do not detract from the value of this book to the American reader. Indeed, because the British profession especially has paid great attention, through organized committees and societies, to the study of anesthetics, and because of the eminence and vast experience of this author, his preferences and technic deserve respectful attention. In fact, every hospital interne will be the better for it if he earnestly studies Hewitt's book before he undertakes his serious duties as an anesthetist.

On Diseases of the Rectum and Anus. Including the Fifth Edition of the Jacksonian Prize Essay on Cancer. By HARRISON CRIPPS, F.R.C.S., Senior Surgeon, St. Bartholomew's Hospital; Member of the Council, Royal College of Surgeons, etc. *Third Edition.* Large octavo; 588 pages; 34 illustrations and 13 plates. London: J. AND A. CHURCHILL; Philadelphia: P. BLAKISTON'S SON & Co. Price, $4.20 net.

About half of this work consists of the author's Jacksonian prize essay on cancer of the rectum, 1876, and of his monograph on vesico-intestinal fistula, 1888, both of which have been revised to date. The other half deals with the remaining diseases of the rectum and anus.

The work is of a distinctively clinical character and is replete with illustrative case reports. Some of the sections appear to the reviewer to be too brief. Thus there is hardly afforded an adequate or very modern picture of ulcerative proctitis. Tuberculous ulceration is dismissed with less than a page.

The book makes interesting reading. It does not, however, fill the place of a text-book on diseases of the rectum and anus, if for no other reason than that operative technic is elaborated but little in the text, and pictorially not at all. It is only fair to observe, however, that the author does not style this a text-book. He intends it, no doubt, as a clinical monograph, a brief presentation of his experiences with various rectal diseases, and a more exhaustive study of rectal cancer (380 cases of which were from the writer's private practice), and of vesico-intestinal fistula.

A Practitioner's Handbook of Materia Medica and Therapeutics. Based Upon Established Physiologic Actions and the Indications in Small Doses. To which is added some Pharmaceutical Data and *the Most Important Therapeutic Developments of Sectarian Medicine as Explained Along Rational Lines.* By THOMAS S. BLAIR, M.D., Member of the Visiting Staff of the Harrisburg City Hospital, of the American Medical Association, of the Pennsylvania State Medical Society, etc. Duodecimo; 253 pages. Philadelphia: THE MEDICAL COUNCIL, 1907. Price, $2.00.

A careful study of this small volume convinces us that it is a work of the greatest usefulness,—a rational, scientific and unique contribution to practical therapeutics.

Dedicated "to the optimist in therapeutics," its author is evidently not a therapeutic enthusiast who does more to injure than to help rational medication, but a careful clinician who studies both the origin and the physiologic effects of his drugs and employs those preparations and doses which his observations have taught him to believe the best.

Whether he knows it or not, every "regular" practitioner prescribes sometimes drugs that have been adopted into our materia medica from those of the homeopathic and eclectic schools, while other drugs, *e. g.*, cactus grandiflorus and echinacea, exploited by the homeopathic and eclectic schools, are even now acquiring use among "regulars."

The author, himself a regular practitioner, has made a study of the materia medica and therapeutics of the sectarian schools. After testing, in his practice, their special remedies and their preparations of drugs used also by the regular profession, he has set forth in this volume a statement, in connection with each drug, of the preparations that are the most useful, according to the indications, and the dosage in which to employ them. In paying tribute to what he finds good in sectarian materia medica, he pays no tribute to sectarianism. Indeed, he opposes it, and exhorts "all physicians to study the legitimate pharmacy of all schools." Discussing *dulcamara* he says: "This drug is one of very many instances in which I could quote three harmonious views expressed in a different manner according to the school point of view. Anyone studying materia medica in this way will soon discover little reason for a divided profession.

The work assumes no tone of authority. It is written throughout from a personal standpoint, but this in an altogether pleasing manner.

The author appears to have no sympathy with the Hahnemannian doctrine of minute doses, but he recognizes many preparations of the homeopathic manufacturers, if used in sufficient dosage, as superior to the corresponding preparations of the U. S. Pharmacopeia. Thus, he prefers the homeopathic ix trituration tablets of mercurius dulcis to our usually made 1/10 grain tablet triturate of calomel, because, while the dose and the drug are identical in each, the long-continued trituration of the calomel in the former, makes it act more efficiently. And so, throughout, we find the author stating, with each drug his preference for the "regular" tincture, or the "Lloyd's tincture" or the "homeopathic mother tincture," etc., or, occasionally, for a strictly trade preparation. And in each instance he gives the reason for his choice.

We commend this manual warmly to all interested in good therapeutics. To those especially, who do their own dispensing it will prove a most excellent guide to the selection of preparations.

Progress in Surgery.

A Résumé of Recent Literature.

A New Method of Operating for Bilateral Harelip Complicated by Projecting Intermaxillary Bone (*Eine neue Operationsmethode für doppelseitige, mit rüsselartig vorragendem Zwischenkiefer komplizierte Hasenscharte*). H. LORENZ, Vienna. *Deutsche Zeitschrift für Chirurgie,* April, 1907.

Dupuytren sought to obviate the deformity by removing the intermaxillary bone, but this method has fallen into disrepute. At present the intermaxillary bone is mobilized, by cutting the vomer, and then pushed backward. A great deformity of the nose results, chiefly because there is no

Fig. 1.

cutaneous septum; besides the intermaxillary bone usually remains loose and without function.

The author devised the following operation in a very deforming double harelip with markedly projecting intermaxillary bone. The intermaxillary bone was removed, the projecting edge of the vomer freshened and the phil-

Fig. 2.

trum, which had not been removed with the intermaxillary, split to the vermilion border, as in Fig. 1. The resulting long flap (Fig. 2) was sutured to the freshened edge of the septum and the distal half of the flap (which consisted partly of the mucous membrane of the lip) used to close the anterior portion of the alveolar cleft in the mouth (see Fig.

Fig. 3

3) This step converted the double harelip into a simple uranocoloboma posticum and also manufactured a cutaneous septum for the nose. The alae nasae were now liberated from the cheek by incision at their base, and the short lips and cheeks mobilized by being freed subcutaneously from the maxilla and malar bones. The lips were now readily drawn together and united by suture, as shown in Fig. 3. The alae nasae were placed in such a position as to assume a normal appearance and the spot, where they were to be implanted, freshened (as is shown in Fig. 3), and retained by a few fine sutures. The small defect between the newly formed cutaneous septum and the lips was closed by a small subsequent plastic.

The result is excellent, especially when the upper lip is lifted slightly forward, as can be done by prothesis. Attempts to close the posterior coloboma, inside the mouth, failed. This operation obviates the great deformity of the nose usually resulting from replacement of the intermaxillary bone.

Amputation of the Thigh Under Hyoscin-Morphin-Cactin Anesthesia. HENRY G. EBERT, Marine Hospital Service. *The Military Surgeon,* May, 1907.

Ebert reports the successful use of the Abbot hyoscin-morphin-cactin combination as a general anesthetic in an amputation of the thigh in the upper one-third. The tablets used contained hyoscin, gr. 1/100; morphin, gr. ¼, and cactin, gr. 1/67. Injections were given two hours, one hour, and half an hour before operation. Anesthesia was ideal and complete throughout operation and for several hours afterward. No ill effects whatever were noticed at any time. Muscular relaxation was not so complete as in ether or chloroform anesthesia so that after the operation no subsequent contraction of flaps took place and there was no more tension on the stitches afterward than at the time they were put in.

Ebert thinks this may prove to be the ideal anesthetic for field use and emergency work where one may be short handed, as it does away entirely with the anesthetist and the space and care necessary in the transportation of ether or chloroform. The absence of inconvenient after-effects is a most valuable feature of this preparation in field work. Of equal utility in active service is the possibility of securing complete rest and anesthesia in cases of injuries too extensive to permit of immediate operative attention, such as in visceral injuries of the abdomen, chest or head.

The Treatment of Joint Ankylosis by Means of Transplantation of Cartilage (*Die Behandlung der Gelenksankylosen vermittelst Ueberpflanzung von Knorpelplatten*). R. J. WEGLOWSKI, Moskau. *Zentralblatt für Chirurgie,* April 27, 1907.

Attempts to restore mobility to an ankylosed joint usually fail; it is, therefore, more often deemed wise to encourage fixation in a good position. Various efforts to interpose muscle, fatty tissue and foreign bodies, such as celluloid plates, have been made with but poor success. Joint surfaces are normally covered with hyaline cartilage which, because of its smooth surface, permits motion. In resections, etc., whenever possible at least part of the cartilage is left behind; and early and systematic movements must be instituted in order to encourage the cartilage surface to grow and extend.

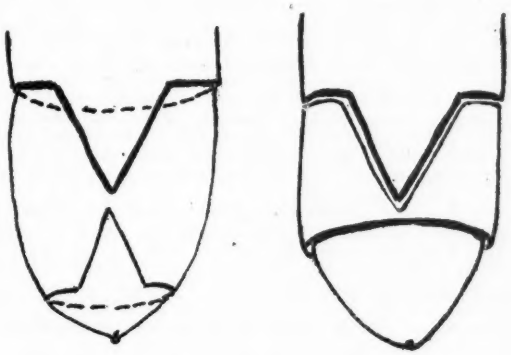
Experiments have shown that cartilage, if removed with its perichondrium may be successfully transplanted. The author selected a case of ankylosis of the elbow on which he had previously operated without succeeding in restoring mobility. The soft parts with the periosteum were mobilized and retracted. Using a Gigli saw in a frame, he sawed out what corresponded to a humeral joint surface from the shapeless bone mass; then a corresponding surface in the ulna, and finally freed the head of the radius from the callus. The operator now exposed the cartilages of the 6th and 7th ribs, and removed two strips of cartilage, corresponding to the entire length and breadth of the costal cartilage, but including only half its thickness. The strips were 5 x 2 x 0.3 cm. The strips were placed between the two new formed joint surfaces of the elbow, with the perichondrium toward the surface. No sutures were needed as the closely apposed bones kept the strips in place. The wounds healed *per primam*, and on the tenth day movements were begun. In four weeks the patient could bend the elbow 60°-70°, and had normal pronation and supination. Five weeks after the operation the patient died of pleuro-pneumonia. Autopsy showed the cartilage grown fast to the bone on which it had been placed, and the

opposing surface was smooth and glistening. At the edges, the cartilage grew thinner and merged with the bone surface. Microscopically the cartilage was well preserved.

A second operation of similar nature has given excellent results.

Circumcision—A Plastic in Constricted Prepuces. O. H. ALLIS, Philadelphia. *Annals of Surgery,* April, 1907.

Neglected prepuces collect inspissated smegma near the corona glandis. Adhesions may form, balanitis causes irritation, interference with urination results, and in one of the author's cases epithelioma required amputation of the organ. Allis believes that after circumcision there should be a hood of prepuce left, which can be readily retracted in order to preserve cleanliness, but that the glans should not remain permanently uncovered. If the prepuce is closely drawn over the glans simple splitting from the free margin to corona sufficies, as the dog's ears shrink, but by this operation the glans remains permanently uncovered. To prepare a retractable hood the author circumcises at the extremity of the prepuce. He



then makes a "V"-shaped flap, its apex at the primary circumcision, its base at the point of greatest circumference of the glans. From the base of the flap, which embraces only the outer skin, the incision is carried transversely around the penis. The mucous layer is now incised and retracted, then sutured. A similar but reversed procedure can be employed, in which the "V"-shaped flap is in the mucous layer.

Holes in the Mesentery with Herniation of the Intestine. G. K. DICKINSON, Jersey City. *Journal of the American Medical Association,* April 13, 1907.

The author reports two operations in which intraperitoneal herniæ through holes in the mesentery were found to exist, and remarks on the comparative rarity of the condition. He attributes the occurrence of the holes to defective arterial supply; they are usually found in the mesentery near the cecal region where the anastomosis of the ileocolic branch of the mesenteric artery with the intestinal branches is sometimes so incomplete as to make it impossible to inject this area.

Intestinal Resection and Anastomosis: a Rapid and Safe Method. W. L. WALLACE, Syracuse. *Buffalo Medical Journal,* April, 1907.

After going well beyond the site of the obstruction, the upper bowel is divided between two clamps. Into the upper loop is inserted a rectal or stomach tube and tied in place. The end is left outside of the abdomen, permitting the bowel to empty itself. As it does so, more and more gut is drawn upon the tube. The lower end of the obstructed intestine is then divided between clamps, and with a light behind the mesentery, the vessels supplying the resected loop are tied. This prevents hemorrhage and the ligation of vessels that supply the healthy margins of the anastomatic loops. The ends of the intestine are opened and half a Murphy button is inserted into each lumen. The lumina are then closed with a purse string suture and a lateral anastomosis is made between the upper and lower ends by merely pushing each half of the button through the intestine and clamping them together. The author has found that he can perform an intestinal resection far more rapidly by this method than by any other. It possesses also the additional advantage that it obviates any danger of necrosis due to cutting off of blood supply.

Gastroscopy. CHEVALIER JACKSON, Pittsburg. *Medical Record,* April 6, 1907.

The author uses a simple long tube which is passed by sight directly into the stomach. The patient must be fully anesthetized and the sotmach collapsed. The technic, which is described in detail, appears rather difficult. The histories of fourteen cases are related in which gastroscopy appeared to be of value. Illustrations are given showing the optical appearances. With the aid of his instrument, the author has been able to diagnose such diseases as chronic gastritis, gastroptosis, malignant disease of the cardia and of the pylorus and peptic ulcer. He removed one foreign body and in one case the findings enabled him to make a diagnosis of gastric syphilis. The explorable area of the stomach includes more than a third of the greater curvature and of the anterior and posterior walls at their inferior portions. The pylorus and fundus can be brought within range of the gastroscope by external manipulations. The author considers the dangers to be practically limited to those of the anesthetic.

The Admissibility of Extensive Resection of the Small Intestine (*Ueber die Zulässigkeit ausgedehnter Dünndarmresektionen*). STORP, Danzig. *Deutsche Zeitschrift für Chirurgie,* April, 1907.

That the human being can continue to live without a stomach has been proven by the complete gastrectomies of Schlatter and Schuckhardt, likewise by patients fed solely through jejunostomy openings. The large intestine, also, has been excluded by enterosigmoidostomies, in a few instances accompanied by resection of the entire colon. In the case of the small intestine the question is of somewhat different import, as a certain length only can be removed without producing permanent disability and death from inanition. Experimental work on dogs has shown that at least one-half of the small intestine can be removed without producing permanent effects on the general nutrition; but as these experiments were made on carnivora they cannot be directly translated to human beings, who are used to a mixed vegetable and meat diet. The author has collected 22 cases in which more than 200 cm. of the small intestine has been resected, in one case, that of nigrisoli, the removed portion reached 520 cm. without effect on the nutrition.

The author's case was that of a young man in whom a large spindle-celled sarcoma was found between the layers of the mesentery. To remove the tumor it was found necessary to resect 510 cm. of the small intestine. End to end anastomosis by suture was performed. The convalescence was uninterrupted except for a tendency to diarrhoeal movements. The patient gained eight pounds in weight in the two succeeding months, and the stools were normal both macro- and microscopically. Four months after the operation extensive abdominal and thoracic metastases could be shown by physical examination.

The length of small intestine varies greatly in different races and in different individuals. Computations by Henle place the usual length of small intestine as between 544 to 608 cm. without the duodenum. Beneke counts 387.5 cm. to each 100 cm. of body length. The author's patient, therefore, had approximately 674 cm. of ileum and jejunum, of which more than ¾ was resected without impairing the nutrition. From other cases, it is clear that if peritonitis has produced changes in the abdomen, resection of much smaller lengths of intestine may have deleterious effects on nutrition. In any case such patients will be obliged to consume larger amounts of food to keep up their body weight.

A Series of Interesting Gynecological and Obstetric Cases. T. S. CULLEN, Baltimore. *Journal of the American Medical Association*, May 4, 1907.

Cullen gives detailed reports of several cases of more than usual gynecologic or obstetric interest. The first is that of a patient from whom he removed a cystic uterine myoma weighing eighty-nine pounds. The patient had been aware of its presence for twenty years, and notwithstanding its size was able to do her household duties up to three weeks before the operation. Her principal inconvenience had been the danger of suffocation if she turned on her back in bed. Though considerably larger myomatous uterine tumors have been reported, this appears to be the largest successfully removed. Owing to the exigencies of the case no part of the abdominal wall was resected, but the tissues contracted remarkably well and the patient rapidly regained her strength and suffered much less inconvenience than might have been expected. This tumor was nourished mainly from the omentum, some of the vessels being 7 or 8 mm. in diameter. Another case is reported of a pedunculated myoma weaned away, so to speak, from the uterus, presenting the rather unique feature of a rope of omental vessels attached to the tumor, 6 cm. in diameter. In the hardened preparation after removal, some of the individual bloodvessels are 1 cm. in diameter A considerable series of such cases have been studied by Dr. Kelly and the author and will be published at some future date. Other cases reported are one of death of fetus with suppuration and anterior perforation of the uterine wall, the pus being walled off by adhesions and the patient recovering after supravaginal hysterectomy; one of abdominal pregnancy in which a seven or eight months' fetus was carried for four years without causing serious symptoms; and one of chorioepithelioma with apparent recovery after hysterectomy.

A New Mode of Treatment for Inoperable Cancer of the Uterus by Acetone. G. GELLHORN, St. Louis. *Journal of the American Medical Association*, April 27, 1907.

Gellhorn recommends the use of acetone as a valuable palliative remedy in inoperable uterine cancer, as it destroys the distressing odor, checks the hemorrhage and improves the general condition. Its use was suggested by the employment of this drug in laboratory work for hardening tissues. The treatment should begin with thorough shelling out of the ulcerating area. The curetted cavity is thoroughly dried with cotton sponges, the pelvis raised, and from half to one ounce of acetone is poured into the wound through a tubular speculum. The narcosis is then interrupted and the patient left in the same position for from 15 to 30 minutes. Then, by lowering the pelvis, the acetone is permitted to run out through the speculum, and the cavity is packed with a narrow gauze strip soaked in acetone. The healthy mucosa of the vagina and vulva are cleansed with sterile water and dried. Beginning on the fourth or fifth day after the operation, the process of applying the acetone is repeated two or three times a week, without narcosis, and as the cavity decreases in size a smaller and smaller speculum can be used. The treatment almost immediately checks the discharge, which, with its odor, gradually disappears. The hemorrhages fail to recur and the general condition improves. The treatment causes no special pain, but anodynes may still be necessary for that due the deeper extensions of the cancer. Urinary examinations so far have given no evidence of absorption of acetone. Two cases are reported, showing the value of the treatment when other treatment had failed.

Primary Carcinoma of the Vagina and Its Operative Treatment (*Primärer Scheidenkrebs und seine operative Behandlung*). J. JACUB, Moscau. *Zentralblatt für Gynäkologie*, April 13, 1907.

Although 2 per cent. of all women who die between the ages of 46-50 are the victims of carcinoma of the uterus, carcinoma of the vagina is most uncommon. Carcinoma of the vagina is most common between 40-70 years of age. It appears either as a circumscribed worty tumor the size of a pea to a walnut, which later ulcerates and produces a crater-like defect, or as a diffuse superficial growth, which converts the entire vagina into a narrow inelastic tube. In its course this form of cancer is most malignant, as it spreads easily to the lymphatics of the broad ligaments and those about the rectum. The symptoms are so readily recognized that they will require no special mention. Complete extirpation of the uterus and of most of the vagina are indicated.

The author reports two cases—one in a woman of 44, the other 57 years of age, in which the upper third of the vagina was involved. He operated through the perineum, completely freeing the vagina and also extirpating the uterus from below. Only a narrow strip of anterior vaginal wall was left in order to form a basis for a new vagina. The operation is not difficult, but occupies 2½-3 hours. The first patient died 1 year after operation from recurrences; the second is alive and well, 1½ years since the tumor was removed.

The Induction of Labor in Prolonged Pregnancy. R. G. MCKERRON, Aberdeen. *Journal of Obstetrics and Gynecology of British Empire*, May, 1907.

About two in three hundred and ninety cases exceed the normal limit of pregnancy, 285 days. The influence of undue prolongation of the onset of labor is harmful to both mother and child. The fetus is usually larger and longer than normal, although through loss of fat its weight may not be excessive. The circumference of the head is increased and the cranial bones more ossified. The shoulders also usually are increased in size in proportion to the head. All these changes increase the danger during labor. The placenta may show increased thrombotic changes and thus imperil the fetus in utero. The undue distension of the mother's abdomen may cause weakness of the abdominal muscles. Furthermore, the uterine muscle may undergo fatty degeneration; such as is the rule during the puerperium, and thus occasion weak pains and post-partum hemorrhage.

For all these reasons the author believes it wise to induce labor by means of the intrauterine bougie in cases which have gone markedly beyond term. This does not include every case in which the date of labor and the calculated term fail to correspond. The size of the child in relation to the mother's pelvis is the most reliable guide. Induction of labor is especially advisable in primigravidae.

Cystoscopy in Tuberculosis of the Urinary Tract. WILLY MEYER, New York. *New York Medical Journal*, April 27, 1907.

If used properly Meyer has never seen any harm done by cystoscopy in genito-urinary tuberculosis. He believes that in most cases it is an absolutely necessary procedure. The site of pain is no sure guide as to which kidney is involved; the cystoscope, however, gives us definite information upon this point. Ulceration of the ureteral orifice or its neighborhood is found in the great majority of cases of descending tuberculosis. The author has seen but one exception to this rule. In early cases in which there is no communication between the focus and the renal pelvis, separation of the urine from both kidneys with examination for tubercle bacilli is necessary to determine the diagnosis. In a somewhat later stage, the cystoscopic picture may merely be a hyperemia about the orifice, the latter is immovable, gaping, and has an irregular zig-zag contour. In the more advanced stages when the bladder has contracted to a considerable degree, a special technic is necessary in order that a cystoscopic examination may be made. After preliminary irrigation, the posterior urethra and bladder are anesthetized with 2% alypin. After injecting from 90 to 150 c.c. of boric acid solution into the bladder, the cystoscope can usually be introduced. The author uses an irrigating cystoscope so that if hemorrhage exists, the vesical solution can be changed. Meyer describes in detail the method of procedure after the cystoscope has been introduced. He describes the appearances in cases of a probable ascending tuberculosis, which he believes exists. He also approves of ureteral catheterization, provided the catheter is not introduced more than one to one and a half inches into the lower end of the urethra, and not at all where there is ulceration present. The author regards chromocystoscopy as valuable in certain cases in which catheterizating of the ureters is to be avoided.